The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LV, NO. 18 CHICAGO, ILLINOIS OCTOBER 29, 1910

RECENT PROGRESS IN THE MICROSCOPIC ANATOMY AND DIFFERENTIATION OF CANCER*

F. B. MALLORY, M.D.

From the Pathological Laboratory of The Boston City Hospital

BOSTON

Cancer is a clinical term applied to malignant epithelial new growths. From the pathologist's point of view it may be defined as an epithelial tumor which infiltrates, and which may give rise to metastases. To understand the full significance of this definition it is necessary to study in groups by themselves all the tumors which arise from each variety of normal epithelial cells and which tend to differentiate like them. Each group has peculiarities of its own.

The tendency is steadily increasing to place together and study in a group by themselves all the tumors built up from the multiplication of single type-cells which tend to differentiate in a similar manner. As example of type-cells may be mentioned the fibroblast, the smooth muscle cell, the neuroglia cell. It must be borne in mind, however, that two or more varieties of the same type-cell often exist normally. For example we have the ordinary smooth muscle cell of mesenchymal origin and a second variety occurring only around the coil and mammary glands and ducts, and generally believed to be of epithelial origin. Both varities of cells tend to differentiate in the same way. In like manner we have cardiac and striated (skeletal) muscle cells of different origins, in which a like differentiation of the cytoplasm takes place.

In the past, tumors arising from the same type-cell have been grouped and discussed separately because of differences in arrangement of cells, rate of growth, and tendency to invade tissues and to give rise to metastases, as though the tumors thus arbitrarily separated had little or no relation to each other. Thus adenomas have been put in one class and carcinomas in another; in like manner angiomas and endotheliomas have usually been separated and discussed as having little or no relation to each other.

The newer method of classification recognizes that every simple tumor is due to the proliferation of one of the type-cells and that the blood-vessels and stroma are furnished by the surrounding and included tissues and are not themselves tumor-cells. The type-cell out of which the tumor is built is the one important element and gives the name to the tumor. Rate of growth, arrangement of cells, invasion of surrounding tissues, formation of metastases, and retrograde changes are all features of secondary importance.

This method of studying and classifying tumors demands exact knowledge of the morphologic and chemical differentiation of the normal cells, both in their fully developed state, as found in the adult, and in their early developmental stages as seen in the embryo, so that the information obtained may be applied to the study of tumor-cells; because long-continued observation has demonstrated that tumor-cells tend to differentiate as the cells from which they arise would do under normal conditions.

The epithelial tumors form the largest and most important group of the simple tumors, and are on this account often put in a division by themselves in contrast with all the other simple tumors. They should be studied together, not separated on a clinical basis into two groups, the benign and malignant epithelial tumors. Studying them together enables us to determine what features are common to all epithelial tumors. Inasmuch, however, as there are many varieties of epithelial cells of various origin, we must divide this large group into as many subgroups as there are normal varieties of epithelial cells in order to ascertain what are the peculiar characteristics of each subgroup of epithelial tumors. This subdivision is already recognized to some extent and has led to valuable results, but should be carried out completely and thoroughly. Thus the tumors derived from the epithelial cells of the enamel organ, of the chorionic villi, and of the adrenal cortex are usually grouped by themselves. This method leads to a careful study of all the epithelial tumors arising from an epithelial organ or tissue. It leads also to a separation of those tumors of which the cells differentiate like the cells of the organ involved from those arising from included epithelial cells of other origin: for example, adrenal tumors in the kidney and liver. It demands full knowledge of embryologic development and of embryologic possibilities in the way of cell remains and displacements from which tumors may arise.

In a brief presentation, such as this necessarily is, I am able to discuss and illustrate only a few of the various groups of epithelial tumors and to call attention to certain interesting points brought out by this method of studying them.

The different epithelial tumors are derived from a heterogeneous variety of epithelial cells most of which are not very sharply characterized. Epithelial cells produce no intercellular substances, unless possibly epithelial fibrils and the so-called intercellular bridges should be so regarded. We are limited, therefore, to the differentiation of nucleus and cytoplasm and to certain chemical products for our powe. to recognize the different varieties of epithelial cells. Owing to this limited differentiation of the normal cells it is easy to go astray when

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

* EDITOR'S NOTE:—This article is part of a Symposium on Progress in the Problems of Cancer. The other articles and the discussion appear in this issue of THE JOURNAL

the tumors derived from them are studied, because the differentiation of the cells in them is usually less than that of the normal cells. And yet the careful study of the differentiation of the different types of epithelial cells is unquestionably the key to the full understanding of this large and important group of tumors.

The properties of the different groups of epithelial tumors vary greatly. Those derived from certain cells uniformly invade the surrounding tissues and give rise to metastases, while others derived from a different type of cell grow expansively only and cause disturbance solely by pressure. From still other cells both types of tumors frequently arise.

Of the different groups of epithelial tumors, two which have already been thoroughly studied and which are usually classified under distinct headings, will be mentioned. Little or nothing apparently remains to be

Figure 1

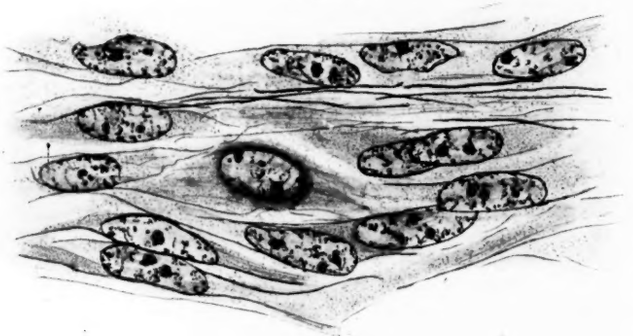


Figure 2

Figure 3

Figs. 1, 2 and 3.—Cells of rodent ulcer, characterized by their cubical, cylindrical and spindle shape, their small amount of cytoplasm and their intimate relation to each other, frequently producing long fine and coarse fibrils running in the long axis of the cells. These cells do not differentiate like the cells of the surface epithelium.

added to what is now known about them. I refer to the adamantinoma and to the chorionepithelioma. The cell differentiation peculiar to each and the embryologic origin of the tumors have been fully worked out and described.

ADAMANTINOMA

The adamantinoma arises from cells which differentiate like those of the enamel organ. The cells of this structure are of epiblastic origin, but do not undergo cornification. The cells of the outer layer are cuboidal in shape, those of the inner cylindrical. The cells between these two layers form the enamel pulp, and correspond to the prickle-cells of the epidermis; they become more or less separated from each other by vacuolization but remain connected by cell processes so that they resemble to some extent mucous connective tissue cells. The nuclei in the cylindrical cells of the inner layer are situated away from the underlying connective tissue instead of close to it, as is usual in most other epithelium lining surfaces. It is these cylindrical cells which lead to the formation of enamel, and hence are known as adamantoblasts.

The cells of tumors which arise from adamantoblasts tend to differentiate like them: they produce cells like those in the enamel pulp but do not give rise to enamel so far as my experience goes. The tumor grows as branching masses of epithelial cells. There is a moderate amount of connective-tissue stroma in which bone derived from the jaw is occasionally present. Cysts often form in the epithelial masses owing to distention and coalescence of the vacuoles between the cells, corresponding to those in the enamel pulp; other cysts, which may be more numerous and larger, often occur in the connective tissue of the stroma as the result of focal collections of fluids. Rarely the cells corresponding to those in the enamel pulp assume a concentric arrangement and suggest epithelial pearls.

The adamantinoma grows expansively only, and produces no metastases. In sections it presents an alveolar arrangement with solid masses of cells or in consequence of edema a glandular or cystic appearance. Owing to its location and the size it sometimes reaches it may cause clinically much local disturbance.

CHORIONEPITHELIOMA

The chorionepithelioma arises from cells which tend to differentiate like those covering the chorionic villi. It contains, therefore, two varieties of cells which characterize it, epithelial-like cells, corresponding to the layer of Langhans, and multinucleated cells corresponding in structure to the syncytial layer. The syncytial cells originate either from the cells of the layer of Langhans or both arise from some one common cell.

The chorionepithelioma, a tumor of fetal origin, apparently always invades. It usually gives rise to metastases. Clinically it almost invariably is malignant and leads to death. In the tissue it invades it causes little or no reaction on the part of the connective tissue and hence no well-marked stroma is produced.

The pathology and origin of this tumor and its intimate relation to hydatidiform mole have been thoroughly investigated. Little or nothing seems to remain to be added to our knowledge of the subject.

ADRENAL-CELL TUMORS

A third group of epithelial tumors usually classed by themselves are those differentiating like the adrenal cells. The cortical cells of the adrenal are fairly characteristic, with their delicate vacuolated cytoplasm filled with fat droplets, the prominent cuticle, and the relatively small round nuclei, but other adrenal cells are not so well characterized. The adrenal tumors are therefore not always recognized with ease and certainty. One feature is noticeable; like the adrenal itself they contain little connective tissue stroma. Some of them grow expansively only, and are regarded as adenomas; others grow rapidly, invade readily, and give rise to metastases. Clinically these latter tumors may be rapidly fatal. The origin of these tumors in the kidneys and elsewhere from displaced adrenal cells has been generally taught and accepted. While much is known about these tumors it is doubtful if the subject can as yet be considered finished.

Other varieties of epithelial tumors can be best understood by studying in a group by themselves all those which originate from cells differentiating in the same way; for example, those derived from thyroid cells, liver cells, etc. In no other way is it possible to obtain a just appreciation of this large group of tumors and realize the nature and possibilities of the destructive tumors which may arise from each.

I wish to speak here a little more specifically about two or three groups of tumors bearing on this question.

EPITHELIAL BREAST TUMORS

The epithelial cells lining the glands and ducts of the breast are not particularly well characterized morphologically, but they possess in common with the cells lining the sweat-glands one distinguishing feature. Between them and the surrounding connective tissue is a layer of smooth muscle cells believed to be of epithelial origin.

In the breast arise a variety of epithelial tumors; some grow expansively, others infiltrate and frequently give rise to metastases. As will be shown, it is not possible to separate these tumors sharply into two groups and say definitely that clinically one group is benign and the other malignant. Certain tumors are on the border-line and may at any moment invade the surrounding tissues.

In the adrenal there is little connective tissue stroma; in the tumors of adrenal origin little stroma is produced. In the breast the epithelium rests on a layer of smooth muscle cells outside of which is a large amount of connective tissue. In tumors of the breast the muscle layer is produced in those which grow expansively or in papillary form within the ducts and glands, but disappears when the epithelium infiltrates outside the muscle layer. The connective tissue usually grows abundantly so as to form a well-marked stroma. It is so prominent in the ordinary type of adenoma that it is regarded by some pathologists as forming a part of the tumor which they look on as a simple type of mixed tumor, an adenofibroma. The epithelial cells of a cancer of mammary origin usually arouse the production of an abundant stroma wherever they are carried, for example, into lymph-nodes or bone-marrow, showing that they exert some specific influence on the proliferative activity of fibroblasts.

In chronic mastitis it is common to find small areas of proliferative activity on the part of the epithelial cells lining the ducts and glands. The cells often project in small papillary masses into the lumen. As these masses enlarge connective tissue and blood vessels grow into them. In this way a cellular, papillary growth may fill and dilate the ducts and glands. The epithelial cells in these areas may grow under the lining epithelium, between it and the smooth muscle layer, forming a mild type of invasion. Such a tumor may fill all the ducts and glands of the breast with epithelial cells and yet not pass beyond the smooth muscle layer. This type of tumor is rare but occurs. How is it to be classed? In the ordinary carcinoma the cells infiltrate the lymph-spaces, the lymph-vessels, and the blood-vessels.

It is this relation of the different types of epithelial tumors of the breast to each other and to proliferative processes occurring as the result of chronic mastitis, which requires more careful comparison and study.

The cells of the epidermis are characterized by the formation of numerous short fibrils, which bind the cells together and are known as intercellular bridges. Longer fibrils are sometimes present which are known as epithelial fibrils. The exact relation of these two kinds of fibrils to each other and to the cell is not fully determined. They seem to be due, for the most part at least, to a differentiation of the cuticle of the cell, and not to be an intercellular substance. The cells of the epidermis are further characterized by retrograde changes involving the formation of eleidin and keratohyalin and ending in cornification. In tumors derived from epidermis the cells tend to undergo these same changes and the resulting cornified epithelial cells collecting in masses are termed epithelial pearls. The mitoses occur entirely in cells corresponding in development to the lowest layer, the rete Malpighii; but even in this layer the surface of the cells usually shows the characteristic surface fibrillation which becomes more prominent in the prickle cell layer.

RODENT ULCER

There is another tumor of the skin which deserves mention here. It is usually but not always the lesion which is known clinically to the dermatologists as rodent ulcer. It has been very unfortunately named and elaborately classified into numerous varieties by Krompecher on the theory that it is derived only from the rete Malpighii and that therefore the cells do not undergo the usual transformation into prickle-cells and cornified epithelium.

The tumor in question usually grows slowly; it may spread widely in the corium and form connection with the overlying epidermis at many points. It rarely invades the deeper tissues or gives rise to metastases. The cells may occur as large masses of spindle-shaped cells running in bundles so that seen by themselves they suggest a spindle-cell sarcoma. They also occur in broad and narrow connecting bands. The cells are characterized by their cubical, cylindrical, and spindle shape, their small amount of cytoplasm, and their intimate relation to each other. In addition they frequently produce numerous long fine and coarse fibrils (Figs. 1, 2 and 3) running in the direction of the long axis of the cells. Rarely there is a hint of the formation of intercellular bridges, and small epithelial pearls are occasionally formed. These cells do not differentiate like the cells of the surface epidermis.

Fig. 4.—Showing that the cell differentiation in rodent ulcer is similar to that found in the adult and embryonal cells forming the hairs, having the oval to spindle-shaped nuclei, surrounded by little cytoplasm, forming no intercellular bridges, but giving rise to numerous delicate fibrils, indicating their origin from the hair matrix rather than from the rete of the epidermis.

If, however, the cells forming the hairs are studied in the adult and embryo, it will be found that the cell differentiation is much more like that in these tumors. The cells forming the hair shaft have oval to spindle-shaped nuclei surrounded by very little cytoplasm. The cells form no intercellular bridges but give rise instead to numerous delicate fibrils (Fig. 4) which later fuse to form a homogeneous mass which becomes the hair. The cells around the hair-shaft are cubical to cylindrical in shape, produce only short and delicate intercellular bridges, and undergo only a slight form of cornification.

The cell differentiation in this class of tumors strongly suggests, therefore, that they are derived from cells of a hair matrix and not from the rete Malpighii of the epidermis. They should be grouped and studied by themselves because they have pathologic and clinical characteristics of their own. They infiltrate, but rarely give rise to metastases. They are locally destructive but can hardly be considered clinically very malignant.

A third group of tumors which requires more careful study is that arising in and around the ovaries. The accidental finding of a small, infiltrating, ciliated, papillary adenocystoma in the broad ligament suggests that these tumors may arise from remains of the Wolffian tubes in the ligament. Similar ducts and glands lined with ciliated epithelium and surrounded by smooth muscle frequently occur in the uterine tube. It is the ciliated papillary adenocystomata which prove clinically to be especially malignant. It seems much more probable that they are derived from the ciliated remains of the Wolffian and perhaps Müllerian ducts than from displaced intestinal epithelium as suggested by Ribbert.

What is needed is the careful study of early cases before the ovaries are infiltrated and destroyed and all relations lost. The finding in ordinary routine examinations of small solid masses of squamous epithelium in the wall of two different normal uterine tubes and the occurrence of a thick layer of squamous epithelium lining one fold of the tubal mucosa while the rest was perfectly ciliated suggests the possible origin of epidermoid carcinomas in this region.

I have thrown a few sidelights on the subject of epithelial tumors and have called attention to the lines along which I believe our knowledge of their origin and development can be broadened from the morphologic side, namely, by a more thorough study of the embryologic origin of each kind of epithelial cell and of the histological differentiation which each type of cell undergoes. Each group of epithelial tumors of which the cells tend to differentiate alike should be studied in a group by themselves. To say which of them should be classed as adenomas or papillomas and which as carcinomas (the point about them in which the clinician is most interested) is not easy. From a pathologic point of view we may define cancer as an epithelial tumor which infiltrates and which may give rise to metastases. The infiltration may be only beneath the lining epithelium of a duct or a gland, but it is a beginning. Usually it is into lymph-spaces, lymph-nodes, and blood-vessels.

Harvard Medical School.

MECHANICAL ILEUS COMPLICATING PREGNANCY

PHILIP SCHUYLER DOANE, M.D.
CHICAGO

Mechanical obstruction, or ileus of the large or small intestine, is not infrequently encountered. Late diagnosis, together with imperfect technic, or late protracted operations, may be responsible for a high death-rate in all cases of this character. Refinement in diagnosis, with a perfected, rapid technic, will produce a marked reduction in this mortality. Naunyn reports a recovery of 75 per cent. of all patients with ileus operated on the first or second day of the attack, but the mortality was very great in all patients operated on the third day or later. This is verified by an analysis of cases reported during the past year as listed in the index.

Very few cases are reported of ileus occurring during pregnancy. Williams reports two cases of intestinal obstruction complicating pregnancy. In one an intussusception occurred at the site of a tuberculous ulcer; the second was due to constriction by peritoneal adhesions in a case of tuberculous peritonitis. Death occurred in both instances. He further states that ileus is a very rare complication of pregnancy.

Comparatively few text-books on obstetrics mention this subject in any way, and those doing so give the matter but meager consideration. Peterson recommends immediate Cesarean section if the complication occurs late in pregnancy.

Obstruction by bands and diverticula is given by Gibson as the second most frequent cause of intestinal obstruction. In his collection of reports of 1,000 cases, he classifies the ordinary form called ileus as an obstruction caused by bands and diverticula. The causes as given by him are:

Hernia 35 per cent.
Bands and diverticula 19 per cent.
Intussusception 19 per cent.
Volvulus 12 per cent.
Miscellaneous (fecal impaction, tumors, strictures, foreign bodies, gall-stones, worms, dynamic or adynamic conditions) 15 per cent.

He also states that 6 per cent. of all cases are due to Meckel's diverticulum.

The accompanying table of cases reported during the past two years shows the various causes of obstruction, the treatment of the incarcerated bowel, the time elapsing after initial symptoms and the result. From this report it is noted that death resulted in all but one case in which resection was done after the second day.

It will be seen that many patients were operated on before the bowel became gangrenous, so that resection was not necessary. This fact is most encouraging, for it shows an increasing ability on the part of the surgeon to make a diagnosis early. A study of cases previous to 1908 does not show this.

Abnormal openings in the omentum, mesentery or broad ligament may allow the bowel to become incarcerated.

A. E. Halstead had a case in which the ileum, with its long mesentery, became involved in an abnormal opening in the broad ligament with a resulting incarceration and strangulation.

The development of the pregnant uterus may cause a displacement of the abdominal viscera, and if the band or diverticulum preexists, it may be seen that strangulation could readily take place.

The delayed diagnosis and the subsequent severe shock and prostration in these cases occurring during pregnancy, has made the mortality very great. Accordingly, this may account for the few successful cases of this type being reported.

A well-advanced pregnancy may make the diagnosis more difficult, but the existence of the pregnancy should not deter the operator from relieving the strangulation at the earliest possible moment.

An ileus of the mechanical type may be relieved in its early stages by severing the bands which cause the strangulation. In many of these cases the progress is a slowly developing one; sometimes days elapse before the circulation is so shut off as to cause gangrene of the bowel. Once it has become gangrenous, there is no alternative but to resect and to make such anastomosis as the judgment of the operator may dictate. A lateral anastomosis is usually

selected because of its security, with less danger of subsequent stricture.

If resection is done, drainage must always be employed, but care must be exercised in the placing of this drainage in order that pressure necrosis may not follow. A gauze cigarette drain is used by most operators, the drain resting at one side and not on the anastomosed bowel.

The symptoms of intestinal obstruction should be familiar to the obstetrician as well as to the general surgeon.

Generally speaking, the symptoms may be summarized somewhat after the plan given by Van Zwalenburg, and are as follows:

1. Sudden onset of pain.
2. Vomiting, first of stomach contents, bile and mucus; the mucus with regurgitation of gas, and last, of mucus and regurgitation of gas with possible fecal matter, or a liquid substance resembling feces in odor and color.
3. Absence of fever the first four or five days.
4. Moderate diffuse tenderness, not always localized.
5. Obstipation, after bowel below obstruction has been emptied.
6. Marked and generally increasing prostration.
7. The visible peristalsis wave, falling as it reaches the point of obstruction.
8. Abdominal distention above point of ileus.
9. Borborygmus, or the sound made by flatus passing from one loop of intestine to another, as emphasized by John B. Murphy.
10. Leukocytosis in most advanced cases, but not dependable, especially in the early stages of any case.
11. Previous history of peritonitis or knowledge of existing adhesions.

The mechanical form of ileus is shown in the following report. There was a history of some intestinal inflammation seven years previous to the formation of the ileus; the inflammation at that time having been severe enough to produce adhesions which undoubtedly existed for a number of years:

REPORT OF CASE

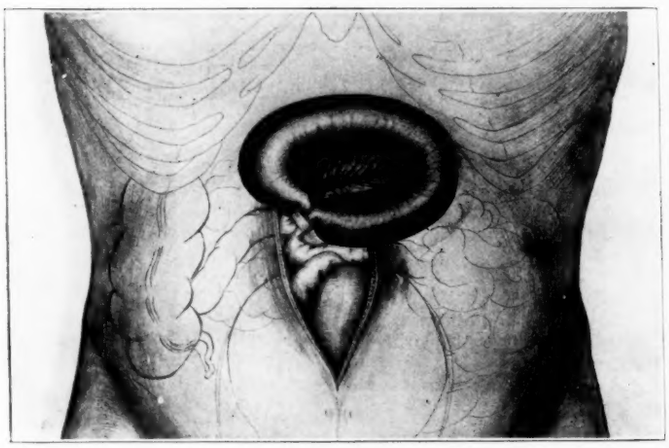
History.—The patient, Mrs. M. B., housewife, aged 27, whose family history was negative, had had no eventful illness until the age of 21, when she had some abdominal inflammation which lasted a number of weeks and was evidently some form of peritonitis. Shortly after this abdominal disturbance, constipation was noted, increasing year by year. In the summer of 1906 constipation was very marked, and in August, 1907, a cystic tumor was found developing from the left ovary and bound down by adhesions into the cul-de-sac of Douglas, pressing upon the rectum, to which it was bound by dense adhesions. I removed it on August 27, 1907, at Michael Reese Hospital. Dense adhesions were encountered throughout the pelvis. The upper abdomen was not explored. Recovery was uneventful, with no symptoms of infection at any time during the two and a half weeks of convalescence. Constipation was relieved at once and the condition of the bowels remained normal up to the time of her pregnancy about one year later. In June, 1908, she was married, pregnancy following almost immediately. Nausea and abdominal distress were marked from the beginning. Constipation was again noted with continuous distention of the bowels by gas. Nov. 14, 1908, the patient was suddenly seized with abdominal pain which was located in the epigastric region, radiating to the right abdomen and back, a diagnosis of appendicitis being made by her then attending physician. Nausea was present within a few hours after the onset of pain. Vomiting also commenced within a few hours, vomitus being stomach contents with some bile. Pain was somewhat relieved by morphin given hypodermically, and the bowels were moved by an enema with good results. Symptoms then subsided for forty-eight hours, pain being present almost constantly but not as severe. There was

TABLE OF CASES OF ILEUS

Author.	Cause.	Disposition of Bowel.	Time of Operation.	Result.
J. P. Lord	Suppurative appendicitis	Resection	7th week	Recovery.
J. P. Lord	Perforating appendicitis	Loop entered by catheter	9th day	Recovery.
J. P. Lord	Suppurative appendicitis	Enterostomy	20th day	Recovery.
J. P. Lord	Complicated conditions	Enterostomy	Not given	Recovery.
C. Van Zwalenburg	Chronic peritonitis	Operation not stated	36 hours	Recovery.
C. Van Zwalenburg	Sudden onset	Resection	5th day	Death.
C. Van Zwalenburg	Following childbirth	Operation not stated	2d week	Recovery.
C. Van Zwalenburg	Chronic pelvic peritonitis	Operation not stated	24 hours	Recovery.
C. Van Zwalenburg	Pregnancy	Operation not stated	24 hours	Recovery.
C. Van Zwalenburg	Appendectomy two years previous	Operation not stated	24 hours	Recovery.
L. G. Hauley	Uterine fibroid	Operation not stated	24 hours	Recovery.
L. G. Hauley	Strangulated hernia	Operation not stated	36 hours	Recovery.
L. G. Hauley	Extra-uterine pregnancy	Operation not stated	Not given	Recovery.
G. W. Ely	Appendectomy two years previous	Resection gangrenous bowel	10 days	Death.
G. T. Vaughan	Meckel's diverticulum	Resection	74 hours	Death.
G. T. Vaughan	Obstruction from band	Resection	7th day	Death.
G. T. Vaughan	Band following appendicitis	Operation not stated	Not given	Death.
G. T. Vaughan	Band following appendicitis	Operation not stated	31 hours	Recovery.
A. E. Rocky	Appendicitis	Adhesions separated, removal of appendix	Immediate	Recovery.
A. E. Rocky	Appendicitis	Appendectomy, intestine opened by puncture	Not given	Recovery.
A. E. Rocky	Band adhesions	Adhesions broken up	Not given	Death.
A. E. Rocky	Appendectomy	Adhesions separated	Immediate	Recovery.
A. E. Rocky	Suppurative appendicitis	Adhesions separated	Not given	Recovery.
A. E. Rocky	Following appendectomy	Thick band severed	Not given	Death.
A. E. Rocky	Appendectomy	Short firm band severed	Immediate	Death.
A. E. Rocky	Sudden onset	Adhesions severed	5 days	Recovery.
A. E. Rocky	Tuberculous peritonitis	Distended intestine opened and evacuated	Immediate	Recovery.
A. E. Rocky	Congenital malformation	Entero-anastomosis	5 days after birth	Death.
A. E. Rocky	Sudden onset	Intestine punctured	Not given	Recovery.
A. E. Rocky	Fall of 25 feet	Not given	5th day	Recovery.
A. E. Rocky	Chronic constipation	Intercolonic anastomosis back of twist	Not given	Recovery.
A. E. Rocky	Double twist of sigmoid in pelvis	Colon emptied	7th day	Recovery.
A. E. Rocky	Hernia	Intestine opened	Not given	Recovery.
H. Rutherford	Gall-stones	Removal of gall-stones from duodenum	Not given	Recovery.
E. F. Neve	Sudden onset	Reduction by enemas	Not given	Recovery.
E. F. Neve	Sudden onset	Enterotomy—opened and evacuated	Not given	Recovery.
E. F. Neve	Sudden onset	Enterotomy and drainage	Not given	Recovery.
E. F. Neve	Hernia	Reduction and drainage	Not given	Recovery.
E. F. Neve	Chronic obstruction	Opened and drained twice	Not given	Death.
E. F. Neve	Chronic obstruction	Operation not stated	Not given	Recovery.
E. F. Neve	Incarcerated hernia	Adhesions broken up	Not given	Recovery.
M. DeForest	Mechanical obstruction	Adhesions broken up	Not given	Death.
A. Theilhaber	Cesarean section	Abdomen not opened	Not given	Recovery.
W. L. Rodman	Post hernia	Reduction	Not given	Recovery.
W. A. Downes	Gall-stones	Ileum opened	Not given	Recovery.
J. B. Deaver	Appendectomy	Band severed	Not given	Recovery.
W. Martin	Tubal pregnancy with adhesions	Band severed	Not given	Recovery.
M. Kirmisson	Meckel's diverticulum	Resection	Not given	Death.

then a recurrence of the severe pain, vomiting and much gas from the stomach, which began to have a fecal odor. Cathartics were given but very promptly vomited. A slight action from the lower bowel was obtained by repeated enemata. Some distention of the upper abdomen was noted at this time, but all symptoms were again relieved by the use of morphin and did not recur with any great severity until the fourth day, when acute pain again became unbearable, the retching being pronounced. No gas passed by the bowel nor was any movement obtained by enemata or otherwise. The upper abdomen was markedly distended, with pulse growing rapid and weaker. Temperature first noted at this time 101. These symptoms were somewhat relieved by the administration of ½ gr. of morphin, patient sleeping for several hours. The following morning the patient was sent to St. Joseph's Hospital still under the effects of morphin and feeling fairly comfortable.

Examination.—She then came under my care, and examination showed pulse 108, temperature 99. The patient was vomiting bile and mucus which had a fecal odor, but the vomitus at no time consisted of fecal matter. The abdomen was markedly distended; a five months' pregnant uterus partially filling the lower abdomen, while a distinct tumor mass could be palpated above the umbilicus, its outline being somewhat sausage-shaped. This mass extended from the lower border of the ninth and tenth ribs on either side, and from



Ileus delivered showing constricting band while pregnant uterus forces bowels upward.

the point a little below the ensiform cartilage to the umbilicus. The mass was markedly tympanitic and on pressure pain was elicited to the right and below the umbilicus, radiating apparently toward the cecum and to the back. The stomach was found distended. The patient claimed that the amount of fluid vomited was far in excess of that swallowed. Vaginal examination revealed some bulging at the cul-de-sac. The five months' pregnancy was verified. Rectal examination revealed nothing but empty bowel. No marked peristalsis was visible at this time. Normal salt enema was given at a very low pressure but with negative result. The stomach was washed out. The pulse was rapid and thready and gradually growing weaker. Prostration of the patient became marked. A leukocyte count of 16,400 was noted the first hour after entrance into hospital, with one of 18,500 two hours later. The urinalysis made at the time of the second leukocyte count was negative, save for a high specific gravity and a distinct reaction for indican. A diagnosis was made of intestinal obstruction and immediate operation decided upon.

Operation.—After usual preparation the abdomen was entered through median line incision at upper part of old scar of previous operation. Omentum was found adherent to peritoneum with much free fluid in abdomen. The pregnant uterus was filling the pelvis and the lower abdomen, causing the intestines to be pressed upward. The intestines first observed were found collapsed and empty. Approaching the tumor mass dense adhesions were encountered, several being of the thick band type and evidently of long standing. The abdominal incision was enlarged upward about and above the umbilicus. The mass was then seen to be a black gangrenous loop of small intestine, forming a typical so-called ileus of the mechanical variety, a thick band passing from the free surface of the ileum at a point about 20 cm. from its junction with the cecum, then passing about a loop of the same intestine and apparently attached to the posterior wall of the abdominal cavity. The occluded bowel with its mesentery was enormously distended and gangrenous. The serosa of the intestine not occluded by the strangulating band was covered by a fibrinous exudate and was very dark in color. This part of the bowel also was somewhat distended. The band was severed at once. The gangrenous intestine with that portion of the mesentery which was in the same condition was clamped off and removed. It was 30 cm. in length. An end-to-end anastomosis was then made after bringing together the edges of mesentery where the V-shaped portion had been resected. A large cigarette drain was carried down to the bowel close to the anastomosis and the abdomen closed.

Postoperative History.—One pint of hot physiologic salt solution was given per rectum every two hours. The patient continued an uneventful course until the eleventh day, when she miscarried a five and one-half months' fetus. The shock following this was severe, but she rallied and her recovery was complete. It is now over a year since her operation and she remains in excellent health, with no more symptoms of the preexisting constipation.

It is possible that adhesions followed the operation of the year previous when the ovarian cyst was removed. The absence of any symptoms of infection, the quick and perfect convalescence with relief of constipation at that time, however, would refute this. Old and numerous adhesions were encountered at the first operation, differing in number and thickness from those usually associated with an ordinary ovarian cyst. The abdominal viscera were not molested in any way at that time, and from the accompanying drawing it is seen that the band was high up in the epigastric region. Had not pregnancy ensued this band might never have caused any trouble. The enlarging uterus gradually crowded the bowel upward until the band became taut about a loop of the incarcerated bowel, which became distended with gas and eventually completely strangulated.

It would seem that in this case the process was somewhat slow in developing. The administration of large doses of morphin, which usually tend to cloud symptoms, may have lessened intestinal peristalsis and delayed the process. Had it not been delayed, it is doubtful that an operation five days after the onset of symptoms would have been anything but fatal to the patient.

A diagnosis of appendicitis was first made by the physician in attendance. From the location of pain and the vomiting, together with the fact that the abdomen was distended by the existing pregnancy, the diagnosis was excusable. Very little credit can be claimed for making a diagnosis in the last stages of these cases. As has been shown here, the symptoms were typical, and it only remained to act quickly and decisively.

To relieve an ileus or intestinal obstruction by operation is usually an attempted life-saving measure of the last resort. The appalling death-rate of late operations proves most emphatically that grave mistakes have been made by procrastination. In no other abdominal work is speed of operation so necessary. Adjoining viscera, already devitalized by inflammatory processes, impaired circulation and restricted nerve-supply, should be handled as little as possible. Anatomic relations should be borne in mind, but not sought after.

If amputation is necessary, resection and anastomosis must be carried out with a rapid and simple technic. If

the serosæ of the two ends of bowel adjoining the resection are healthy, a lateral anastomosis may be done quite as speedily as an end-to-end one. If, however, the bowel is covered with an exudate and is cyanotic, while the mucosa looks normal; or, if the mesentery has been resected and cannot be coaptated without folding under, as in a lateral anastomosis, then the end-to-end method must be employed. On the other hand, if the lumen of either distal or proximal end of the resected intestine differ greatly, a lateral anastomosis must be done.

Drainage is usually employed in cases of resection. Such drainage as will absorb exudate or leakage must be used and so placed as not to cause pressure on the sutured bowel.

After-treatment is important, but stress is laid only on the non-administration of such stimulants as those which favor peristalsis and increase blood pressure.

If pregnancy accompanies an ileus any attempt to relieve the patient of the pregnancy will jeopardize her life; that is, if the ileus is diagnosed late and a resection necessary.

Early diagnosis, followed by immediate and rapid operation with minimum anesthetic, means a lessened mortality in the treatment of intestinal obstruction by ileus.

34 Washington Street.

COLON BACILLUS INFECTION OF OPERATION WOUND

REPORT OF INTERESTING CASE

EDMUND A. BABLER, M.D.

Visiting Surgeon City Hospital, Junior Surgeon Deaconess Hospital

ST. LOUIS

Escherich's classic description of the colon bacillus marked an epoch in medical literature and was quickly followed by an appreciation of the frequent presence of the organism in various parts of the body. Tavel was the first, however, to find the colon bacillus in the tissues of the body outside of the intestinal canal. He found this organism in the wound resulting from removal of a tumor of the thyroid gland.

Colon bacillus infection of a mild character of an operation wound is of not infrequent occurrence in abdominal surgery. I have a patient at the City Hospital who is now convalescent following gun-shot wound of the liver and colon, in which the abdominal incision became infected with the colon bacillus; the operative wound opened *in toto* on the sixth day, when Dr. Chamberlain removed the clips. Fortunately, however, the operative wound does not usually suffer very much from a colon bacillus infection, because the patient's body forces are able to combat the invasion successfully.

The following case of colon bacillus infection of the operation wound exemplifies the distressing result that occasionally follows such infection:

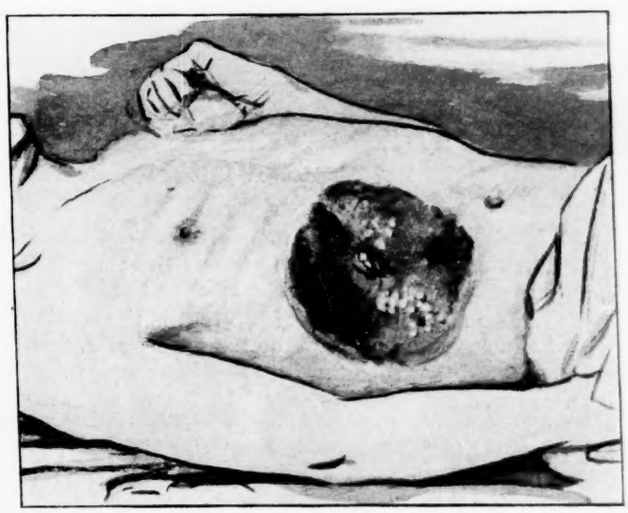
REPORT OF CASE

History.—J. McQ., a white man, a laborer, aged 45, was admitted to the medical department of the City Hospital, May 14, 1910. He had had frequent attacks of malaria; denied syphilis or any serious illness; was accustomed to drink and smoke moderately. Three days previous to admission, while tying his shoe, the patient was suddenly seized with a "stitch" in his right side. This had been more or less persistent since onset. The next day he had a chill, followed by fever. He now complained of severe pain in region of the ninth right intercostal space in the anterior axillary line.

Physical Findings.—Inspection showed the patient's expression anxious; he was anemic and emaciated; respirations somewhat shallow and accelerated; he had a slight cough, which caused pain in the right side; the patient was nervous and excitable; had been drinking. Faint tremors of tongue and fingers were present. Auscultation in right axilla revealed harsh inspiratory and blowing expiratory sound. Numerous dry râles were heard throughout chest. Vocal and tactile fremitus were exaggerated over middle and lower lobes of right lung; relative dulness over left lower lobe; friction rub audible close to right costal margin, heard on both inspiration and expiration. On May 14 the chest was aspirated, but no fluid obtained.

Blood.—On May 16, the leukocyte count was 19,100. On May 30, it was 24,800. On June 5, it dropped to 10,700, while on June 11, it reached as low as 9,850. July 31, the blood showed 85 per cent. polymorphonuclears, 1 per cent. large lymphocytes, 13 per cent. small lymphocytes and 1 per cent. eosinophils. (This latter count was one month after operation.) Later the blood showed the presence of the colon bacillus.

The stools were devoid of amebas, and tubercle bacilli were absent from the sputum.



Necrotic operation wound, infected with colon bacillus.

On June 18, the patient came under the care of Dr. Luton, a member of the staff, and the diagnosis of subphrenic abscess was made. On June 23, I saw patient in consultation with Dr. Luton, and confirmed his diagnosis.

Operation.—On June 24, an incision, two inches in length, was made (under cocain anesthesia) in the anterior axillary line over the most prominent portion of the bulging mass. About two quarts of fluid, resembling that of a liver abscess, were evacuated. Examination showed the abscess to be a subphrenic one, although the palpable liver surface was roughened. A double drainage-tube was inserted. Examination of the fluid evacuated showed liver cells absent, but a pure culture of colon bacilli.

Postoperative Course.—The discharge from the wound was very profuse and the patient did not respond to treatment, although he was able to be up about two weeks after the operation. On July 18, the margins of the wound became very red and somewhat swollen. This process became more and more extensive. On July 23, the wound margins became necrotic and discharged a grumous substance. On July 24, a culture from this substance showed colon bacillus only. On August 10, six minims of a vaccine made from bacteria recovered from fluid from the pleural cavity of the patient, each cubic centimeter containing 100,000,000 dead bacilli, were injected. This injection was followed by a temperature

of 102 F., and seemed to make the patient worse. Injection was not repeated. Blood analysis showed the presence of colon bacilli.

The area of skin destruction became more and more extensive, until at the time of death, two months after the operation, the wound was necrotic to extent shown in the drawing made by Mr. Tom Jones. I am indebted to Drs. Kimzey and Burns, interns at the City Hospital, for valuable assistance rendered the artist.

Autopsy.—This was made by Dr. Gould. The principal findings were destruction of greater portion of the diaphragm between the base of the right lung and the liver. The abscess floor was formed by the liver, while the base of lung formed its roof.

COMMENTS

The true origin of the subphrenic abscess was not clearly determined. The fact that a large portion of the diaphragm was destroyed by the bacterial invasion is interesting. The main feature of the case centered in the action of the colon bacilli on the postoperative wound. I have not been able to find a similar report in the available literature. In my opinion the patient's lowered vitality, combined with the extensive distribution of the organisms, permitted but feeble opposition to the invasion into the skin and subcutaneous tissue.

4826 Delmar Avenue.

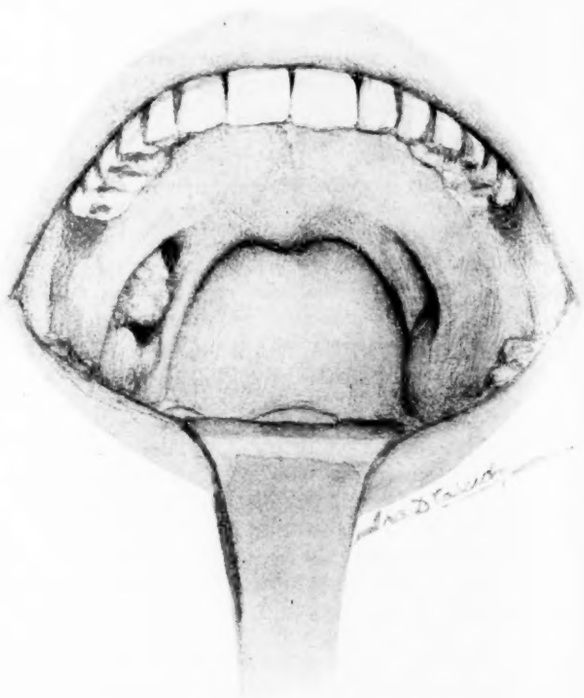
THE TUBERCULOUS TONSIL *

ROBERT LEVY, M.D.
DENVER

In 1886 Trautman[1] made the statement that children of tuberculous parents suffering from hyperplasia of the pharyngeal tonsil showed marked local and general reactions following the injection of tuberculin, the continued use of which resulted in cure of the hyperplasia. From this he argued that such tonsillar affections were tuberculous. It was not, however, until 1895 that any serious attempt was made to prove by laboratory investigation the relationship between hypertrophy of the pharyngeal and faucial lymphoid tissue and tuberculosis. At this time intense interest was awakened by the experiments of Dieulafoy,[2] and, although it has since been shown that these experiments could not be considered conclusive, the interest awakened thereby resulted in the development of an enormous literature, much experimentation and more or less conclusive as well as confusing reports. To a clinician accustomed to using laboratory methods only for purposes of confirming diagnoses made from subjective and objective manifestations, the statement that tonsillar tuberculosis was found in twenty cases out of thirty-four of tuberculosis (Walsham[3]) came as a decided shock. Wood's[4] table of seven observers gives 69 per cent., and it is generally conceded that a very much higher proportion of tonsillar tuberculosis exists than had previously been recognized. The reason for this changed belief may be ascribed to newer methods of investigation based principally on histologic findings and laboratory and animal experimentation. Clinically one finds evidences of tuberculosis of the pharynx with or without tonsillar involvement among the rarer manifestations of tuberculosis. This being the case, I have frequently questioned whether the clinical diagnosis or the laboratory diagnosis should stand. For the purpose of comparing the frequency with which tuberculosis of the tonsils could be clinically diagnosed with the reports of laboratory findings by others I reviewed very thoroughly my private records. In a study of 450 cases of laryngeal tuberculosis I found the following:

Some portion of the pharynx was involved in 64 cases. The pharynx exclusive of the tonsils was involved in 32 cases; the pharynx and tonsils were involved in 24 cases; the faucial tonsils alone were involved in 8 cases.

In other words, of the 450 cases of laryngeal tuberculosis some portion of the pharynx was involved in 14.22 per cent., the pharynx alone in 7.11 per cent., the pharynx and tonsils in 5.31 per cent. and the faucial tonsils alone in 1.77 per cent.



Early stage of tuberculous tonsil.

It is generally conceded that laryngeal tuberculosis occurs in a very large proportion of pulmonary cases. The average frequency may be considered at 30 per cent. If this be accepted as a basis for estimating the frequency with which pharyngeal tuberculosis occurs in all pulmonary cases it may be stated that some portion of the pharynx is involved in 4.26 per cent., the pharynx alone in 2.13 per cent., the pharynx and tonsils in 1.59 per cent. and the faucial tonsils alone in 0.53 per cent.

It may seem difficult to make these figures coincide with those of other observers or even those of the authors[5] published in 1896.

Confirmation of my previous report that pharyngeal tuberculosis occurs in 1.5 per cent. of all cases is found in the table compiled by Lockhard,[6] which gives 1.47 per cent. as the estimate. Confirmation of my present report

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Lewin: Arch. f. Laryng. u. Rhin., ix, 379.
2. Dieulafoy: Abstr. in Laryngoscope, 1896, i, 117.
3. Walsham: Brit. Med. Jour., May 7, 1898.
4. Wood, George B.: The Significance of Tuberculous Deposits in the Tonsils, THE JOURNAL A. M. A., May 6, 1905, p. 1426.
5. Levy: Tr. Am. Laryngol., Rhinol. and Otol. Assn., 1896, p. 60.
6. Lockard: Tuberculosis of the Nose and Throat, p. 332, C. V Mosby Medical Book Publishing Co., St. Louis, 1909.

that tonsillar (faucial) tuberculosis is found in 1.77 per cent. of all laryngeal cases is found in Chiari's[7] estimate of 1.88 per cent. (12 in 635 cases).

The great discrepancy between these figures and those reported from laboratory findings must be a source of much surprise. One explanation is in the present estimate of 30 per cent. instead of 15 per cent. as representing in 1896 the frequency of laryngeal tuberculosis. It also must be concluded that clinical tuberculosis of the tonsils and that determined by histologic examination present marked differences as to manifestations, and consequently as to significance. In order to reconcile this confusion the classification of latent tuberculosis has been made.

Clinical and latent tuberculosis are differentiated essentially by the absence of subjective and objective symptoms in the latter and definite subjective and objective manifestations in the former. Microscopically the differences are not so great, and still we do have distinguishing characteristics. In clinical tuberculosis of the tonsils one sees this structure but slightly if at all enlarged. If an enlargement exists it has no special bearing on the tuberculous process.

The characteristic appearance is a peculiar pallor with a slightly edematous or weeping surface covered with a tenacious, thin, somewhat milky secretion; localized areas of small pin-point or pin-head white or grayish deposits of greater or less extent are seen definitely situated beneath the surface of the mucous membrane. Somewhat later one sees the beginning of ulceration manifesting itself by a superficial excavation, irregular in outline and unattended by inflammatory surrounding redness. As the disease progresses these typical appearances become more pronounced, the ulcerations coalescing in irregular manner, giving a nibbled or mouse-eaten outline to the parts. With the excess of disturbance the edema becomes greater, presenting definitely outlined though not circumscribed swelling. The subjective symptoms are those of discomfort in the throat followed by pain which becomes excessive and is usually associated with more or less marked constitutional symptoms, such as fever, rapid pulse and loss of weight. It is true that these subjective symptoms when confined to the tonsils alone are rarely very marked, but involvement of surrounding pharyngeal tissues takes place so rapidly that the interval between the onset of the tonsillar manifestations and the development of constitutional symptoms is but short. The local appearances presented by this form of the disease are usually definite and characteristic. Occasionally one finds it difficult to distinguish a tuberculous ulceration of the tonsil from one due to syphilis, and this is especially true in instances in which the two diseases are associated. Such cases have at various times come under my observation. The case reported by Lack,[8] in which tubercle bacilli were found but in which the administration of potassium iodid cured the patient, must be looked on as one of syphilis associated with tuberculosis. Here the histologic examination was suggestive though not conclusive of tuberculosis, but the result of treatment must be considered confirmatory of the diagnosis of syphilis.

The symptoms of latent tuberculosis, on the other hand, are extremely vague. Hurd,[9] in describing the appearance of such a tonsil, says that it is "usually pale, the crypts contain cheesy detritus, the edge of the anterior pillar may have a passive hyperemia and the associated lymphatic gland is usually much enlarged and hard." This description might be applied to the appearance of any number of tonsils seen daily.

Botey, quoted by Wright,[10] states that it is impossible by simple inspection to distinguish hypertrophy of tuberculous character from the common hypertrophy of tonsils with which every one is familiar.

Baup,[11] in speaking of the symptomatology of larval tuberculosis, says that "this is still very vague" and that "locally the tuberculous tonsil is not distinguished from the hypertrophied tonsil."

Walsham,[12] in describing his twenty cases of tuberculosis found in thirty-four autopsies, states that all but two of these cases showed no tuberculous manifestations before death.

Histologic examination may also be subject to question and many of the findings attributed to tuberculous changes occur in other pathologic conditions.

Wyatt Wingrave,[13] after examining a large number of so-called tuberculous cervical lymphatic glands, concludes that there are a large number of chronic non-suppurative glands included in the term "tuberculous" which are not due to tubercle at all, but which present all the histologic features minus the specific organism.

Wood[14] states that giant cells and lesions resembling tubercles may result from irritation of foreign bodies and that certain acid-fast bacilli will sometimes give rise to changes scarcely distinguishable from true tubercles. One cannot but be impressed with the apparent difficulty of demonstrating the presence of tubercle bacilli in so-called histologic tuberculosis and authors are generally agreed that without the presence of these microorganisms the diagnosis must of necessity be still questionable. The elaborate and competent work of George B. Wood[15] of Philadelphia forms an important part of the extensive research and literature devoted to this subject. In his experiments on guinea-pigs Pig 3 was the only one showing marked evidences of tuberculosis, and here tubercle bacilli were found in all of the glands. Wood quotes Ravenel's experiments in which after being fed tubercle bacilli by the mouth four hogs developed tuberculosis, three of the four showing ulcerative lesions of the tonsil, which is further evidence in favor of the contention that when these organs are truly tuberculous gross lesions, as shown by ulceration, are present. It may be possible that the ulcerative process is not of necessity a tuberculous manifestation and that, as Wood states, this lesion may be due to a mixed infection of a tuberculous structure whose ordinary resistance to bacterial invasion is lessened. Be this as it may, one must certainly feel better satisfied with a diagnosis based on definite physical signs than with one based on indefinite appearances.

In undoubted tuberculosis the histologic findings are typical. In a case of unquestioned early tuberculous lesion of the right tonsil, of which a drawing is herewith presented, the histologic examination made by Professor Todd of the pathologic laboratory of the Denver and Gross College of Medicine showed the following:

7. Chiari: Die Krankheiten des Rachens, Franz Deuticke, Leipsic and Vienna, 1903, p. 151.
8. Lack: Jour. Laryng. Rhin. and Otol., April, 1908, p. 217.
9. Hurd and Wright: Med. Rec., June 26, 1909.
10. Wright: New York Med. Jour. Sept. 26, 1896, p. 413.
11. Baup: Ann. Otol., Rhinol. and Laryngol., ix, 249.
12. Walsham: Brit. Med. Jour., May 7, 1898.
13. Wingrave: Jour. Laryngol. Rhinol. and Otol., January, 1905, p. 45.
14. Wood, G. B.: THE JOURNAL A. M. A., May 6, 1905, p. 1427.
15. Wood, G. B.: THE JOURNAL A. M. A., May 6, 1905, p. 1429.

The tissue consists of three rather soft whitish pieces which have been preserved in weak formaldehyd solution. The largest measures about 4 by 5 by 6 mm.

In general the histologic structure is that of tonsillar tissue. Scattered throughout all the sections are typical tubercles. They consist of a reticulum with numerous cells of the endothelial type and a very few lymphoid cells. Most of the tubercles contain one or more giant cells—in most cases typical tuberculous giant cells, having caseous centers and peripheral arrangement of nuclei. The tubercles themselves do not show caseation.

The covering of stratified squamous epithelium is intact over much of the free surface, but contains rather numerous wandering cells.

At certain points the tubercles reach the surface and coalesce so as to form a layer of rather diffuse endothelial hyperplasia with an occassional giant cell. Over these regions the epithelial covering is absent, and the most superficial portion is densely infiltrated with polynuclear leukocytes (ulceration).

A number of the sections were stained for tubercle bacilli. In an hour's search only one small group of bacilli were found lying among the endothelial cells at the periphery of a tubercle.

Here tubercle bacilli were found and, although Professor Todd would make a diagnosis of tuberculosis from such histologic appearances, nevertheless the tubercle bacilli must be considered essential factors. Any histologic report containing less than the above typical findings is open to question.

The significance of the latent form of tuberculosis of the tonsils is of particular importance in its relation to glandular involvement. It is known that many varieties of infection may pass through the tonsils and other portions of the pharyngeal lymphatic ring to the nearest glands, causing enlargement of these structures. It has also been shown that among the micro-organisms causing such disturbances tubercle bacilli have been demonstrated and that their passage through the tonsils has been followed by no change in these organs. Friedman,[16] Strassmann,[17] Krückman[18] and others may be quoted in this particular. The significance of this phenomenon must be considered, as Grünwald[19] puts it, dubious. Furthermore, it is not necessary to attribute all forms of cervical adenitis to tuberculosis, for, as Goodale[20] states, there are many instances of enlargement of the glands of a non-tuberculous nature which he is inclined to regard as of toxic origin. In a large number of children presenting various degrees of adenoid or tonsillar changes, enlarged cervical glands were almost invariably found. Tuberculin tests, such as the Moro or von Pirquet, were used in these patients, with the ultimate result that while many of them showed positive reactions the proportion in which negative results were obtained was sufficiently large to be considered as evidence of the non-tuberculous nature of the glandular enlargements.

The question of latent tuberculosis is of special importance in children. The frequency with which adenoids and hypertrophied tonsils are found in early life would make one incline to belief in the occurrence of this form of tuberculosis in children to the extent believed by some, but the infrequency with which clinical, definite manifestations of this affection are found in children must be an argument against this belief.

A tonsil should not be considered tuberculous except under certain well-defined conditions, both clinical and histologic, as outlined above. Nevertheless these organs must be looked on as important gateways for infections of various kinds, tuberculosis included. At the same time one must not conclude that because many infective conditions have their initial lesions in the tonsils, tuberculosis, even though it be brought to the system through this channel, must also be attended with a tuberculous initial lesion here. The infrequency with which tuberculosis is localized in children is a matter of common observation, although it must be stated that exceptions have been reported. The cases of Plicque[21] and Siegert[21] are especially noteworthy.

The manner in which definite local signs of tuberculosis of the tonsils develop may be considered as due to a special reaction to the infection. The experiments of Cornet,[22] in which an ulceration occurred at the point of inoculation almost invariably, are extremely suggestive. The cutaneous reactions described of recent years, in which pronounced local changes showed themselves in patients having tuberculous foci, suggest an explanation of the development of many of the lesions found and localized in the upper air passages. It is stated by Labbé and Levi-Surugue[23] that adults show lesions of the tonsils more commonly than children because of absence of expectoration in the latter, leaving the inference that tubercle-laden sputum is the source of direct infection.

Baldwin,[24] in his lecture on "Hypersusceptibility to Tuberculin in Tuberculosis, etc," makes the statement that many symptoms and pathologic products in tuberculosis are probably due to this reactive function, and quotes Koch's experiments with dead tubercle bacilli, stating that a dose which is sufficient to kill the animal can produce an extensive necrosis of the skin in the region of the injected spot. May we not therefore consider the possibility at least of tuberculosis of the tonsils developing as a result of a local reaction?

PROGNOSIS

In discussing the prognosis of tuberculosis of the tonsils the form of the disease must be taken into consideration. That in which we as clinicians are especially interested is the clinical variety, because of the fact that the diagnosis is less obscure. This form of tuberculosis must be looked on as attended with most serious consequences, presenting evidences of the gravest form of tuberculous infection. Its curability is extremely doubtful. It is usually associated with involvement of other structures in the pharynx, larynx and elsewhere. When it occurs an unfavorable prognosis is justified.

The tuberculous tonsil as represented by the latent form less well recognized and less easily determined offers questions for prognosis also of great interest and importance. Among these questions that of the development of tuberculosis in adults from such infection during childhood has been considered at some length by Harbitz,[25] who concludes that this cannot at present be demonstrated, but that such infection must certainly be

16. Friedman: Am. Jour. Med. Sc., February, 1902, p. 292.
17. Strassmann: The Year-Book of Nose, Ear and Throat, 1900, p. 94.
18. Krückman: Abstr. in Internat. Centralbl. f. Laryngol. u. Rhinol., p. 775.
19. Grünwald and Newcomb: Atlas of Mouth, Pharynx and Nose, 1903, p. 127.
20. Goodale: The Year-Book of Nose, Throat and Ear, 1907, p. 291.
21. Plicque: Abstr. in Laryngoscope, 1898, v, 189.
22. Cornet: Quoted by Lockard, p. 350.
23. Labbé and Levi-Surugue: Abstr. in Anns. Otol., Rhinol. and Laryngol., ix, 93.
24. Baldwin: Yale Med. Jour., February, 1909, p. 259.
25. Harbitz: Sixth Internat. Congr. on Tuberculosis, i, 156.

considered of great significance. Campbell,[26] on the other hand, believes that if the tonsil and adenoids were more frequently removed infectious diseases, including tuberculosis, would be more infrequent. The supposed immunity from infection in childhood is also discussed by Harbitz, who states that for the time being this must be only a hypothesis.

TREATMENT

The infrequency with which manifest tonsillar tuberculosis is found, except as a complication of tuberculosis of other portions of the upper air-tract, makes the treatment by extirpation a method rarely if ever indicated. Of what value is the removal of tuberculous foci here in the presence of numerous foci adjacent or more remote? In these cases the only results that have been of value have been obtained by methods of treatment applicable to all the lesions found. These have been obtained by the use of local palliative measures, more or less vigorous application of the galvanic cautery, especially after the method of Grünwald[27] and by the use of tuberculin in well-selected cases in conjunction with judicious general, hygienic and climatic treatment.

The treatment of latent tuberculosis of the tonsils consists in their removal by the most complete method possible. The purpose of such an operation is not so much to remove a possible tonsillar involvement as it is to prevent further infection through structures known to favor such infection. The question as to whether all tonsils associated with enlarged cervical glands require operation depends on the view one takes as to the nature of the lymphatic involvement. The utter impossibility of determining this by inspection must be evident. The histologic diagnosis cannot be made until after the treatment has been carried out; therefore the judgment of the observer alone must be dependend on. Generally speaking, I believe that when there exists cervical adenitis of considerable degree and that whenever the patient's general condition indicates lowered resistance, such as is demonstrated by frequent colds and evidences of malnutrition, even though other well-recognized indications for tonsillectomy are absent, the best interests of the patient will be subserved by radical operation.

SUMMARY

Tuberculosis of the tonsils occurs more frequently than previously recognized, owing to newer methods of investigation.

Clinically, tuberculosis of the pharynx, with or without tonsillar involvement, must still be looked on as among the rarer manifestations of tuberculosis.

Clinical tuberculosis of the tonsils and that determined by histologic examination present marked differences. They are differentiated by the absence of symptoms in the latter and definite subjective and objective manifestations in the former.

Many of the histologic findings attributed to tuberculous changes occur in other pathologic conditions.

The diagnosis of true tuberculosis of the tonsils is more satisfactory when based on definite physical signs corroborated by typical histologic findings.

It is not necessary to attribute all forms of cervical adenitis to tuberculosis.

Tuberculosis of the tonsil may be considered the result of a local reaction.

The clinical form must be looked on as very grave, its curability being extremely doubtful.

Extirpation of the tonsils is rarely indicated in clinical tonsillar tuberculosis.

In the presence of cervical adenitis, lowered resistance and evidences of malnutrition the best interests of the patient will be subserved by radical tonsillectomy even though other well-recognized indications for the operation be absent.

Metropolitan Building.

26. Campbell: New York Med. Jour., May 1, 1907.
27. Grünwald: Die Theraple der Kehlkopf Tuberculosis, J. F. Lehmanns, Munich, 1907.

CONDITIONS DEMANDING ENUCLEATION OF THE FAUCIAL TONSILS *

JOSEPH C. BECK, M.D.

Clinical Professor of Oto-Laryngology of the College of Physicians and Surgeons (University of Illinois); Oto-Laryngologist to Cook County Hospital and to the North Chicago Hospital

CHICAGO

It is my belief that, with the rarest exception, whenever the tonsil requires surgical interference enucleation should be the procedure, and, consequently, whatever I may say of the pathologic conditions in the tonsil itself, in its immediate neighborhood and in the system in general, it will be understood that I consider radical removal of the tonsil required to improve these conditions. The subject of the pathology of the tonsil, with special reference to its causing not only local and regional disturbances, but also general manifestations, has been so thoroughly discussed in the past two or three years that I can add but little that is new and only confirm observations made by others.

In regard to the many general disturbances mentioned in this paper for which the diseased tonsils are held responsible, one may be led to believe that it is my intention to attribute too many diseases to this source of infection. Every one of the conditions to be mentioned, however, has the following three points to support this contention: First, many authenticated reports exist; second, attacks of tonsillitis, mild or severe, preceded the general manifestations, and, third, following the enucleation of the tonsils the general manifestations were either markedly improved or completely cured.

There are, however, two pathologic manifestations in connection with the tonsils on which I desire especially to dwell. These are the influence of the removal of the tonsils (1) in enlarged glands of the neck and (2) in the cardiac complications of the rheumatic affection.

CONDITIONS BENEFITED BY ENUCLEATION OF TONSIL

The following are some of the conditions which are distinctly and beneficially influenced by complete enucleation of the tonsils. They may be subdivided into three groups:

1. Local, or conditions affecting the tonsil itself.
2. Regional, or conditions in close proximity to the tonsil.
3. Systemic or general.

1. The local conditions demanding enucleation of the tonsils are the following:

1. Chronic lacunar tonsillitis in which there are repeated acute attacks.
2. Chronic lacunar tonsillitis in which there are repeated attacks of peritonsillar abscess.
3. Tuberculous tonsil.
4. Primary chancre of the tonsil.
5. Malignant disease of the tonsil.
6. Acute infections, such as diphtheria, scarlet fever, etc.

* Read in the Section on Laryngology and Otology of the American Medical Association, at St. Louis, June, 1910.

2. The regional conditions demanding enucleation of the tonsils are as follows:

1. Chronic persistent pharyngitis, especially lateral.
2. Tubal catarrh, with associated middle-ear disease.
3. Enlarged glands of the neck.
4. Apical tuberculous infection.
5. Perpetuating bronchitis in children.

3. The general or systemic conditions are the following:

1. Rheumatism, with its complications and sequelæ, as, endocarditis and myocarditis, arteriosclerosis, arthritis, pericarditis, pleurisy, peritonitis, perineuritis, and myositis—so-called muscular rheumatism.
2. Blood changes, as chronic septicemia with secondary anemias.
3. Gastro-intestinal disturbances, such as gastro-enteritis, and duodenal catarrh, with a subsequent cholangitis.
4. Parenchymatous changes, such as parenchymatous nephritis, hepatitis and pancreatitis.
5. Changes in the special organs, as episcleritis and phlyctenular kerato-conjunctivitis.

RESULTS OF OPERATION

My cases exhibiting the above-named conditions have been carefully observed and recorded, so that definite conclusions can be drawn from them. It is unnecessary to tabulate all of them and a statement to the effect that either a cure or marked improvement was the result following complete enucleation of the tonsils is sufficient.

Comparative tests in which one tonsil was removed and the amelioration of the disease observed, while after the removal of the second tonsil a complete cure was obtained, were not at all rare. Some of the striking results were the following:

Tuberculous Tonsil.—Primary tuberculosis of the tonsil has occurred but once in my practice, and complete enucleation was followed by cure.

Primary Chancre of the Tonsil.—In one case of primary chancre of the tonsil, in which the operation of complete enucleation was performed, in 1907, the patient has remained free from any specific disease, negative Wassermann reaction was obtained three months ago.

Malignant Disease of the Tonsil.—In several cases of malignant disease, as sarcoma and carcinoma, in which complete enucleation was done, recurrence and death followed except in one case of sarcoma.

Acute Infections.—Acute infectious diseases, such as diphtheria, scarlet fever, etc., have been prevented by a complete enucleation of the tonsils; and when these diseases occurred, they have been of a very mild form. In the diphtheria hospital in Chicago, enucleation is performed on patients as soon as their cultures are negative.

Tubal Catarrh, with Associated Middle-Ear Disease.—In regard to the influence of complete enucleation of the tonsils in tubal catarrh and chronic adhesive middle-ear inflammation, I have observed distinct improvement in the symptoms of deafness and tinnitis, in five cases out of twenty-seven, and, in many of the remaining cases, which belong to the more progressed types, some improvement.

Enlarged Glands of the Neck.—That enlarged glands of the neck are caused by infections from the mouth and pharnyx, is an established fact, and that Waldeyer's lymphatic ring, when infected, contributes the greatest source of infection to these glands, is equally well known. That the faucial tonsil, the largest of the lymphoid bodies in this region, causes the greatest amount of infection is fairly well established in the surgeon's mind, and that the removal of this structure prevents reinfection of these glands is the contention of most observers. While the general surgeon who is dealing with the subject of enlarged glands of the neck, frequently spoken of as tuberculous glands, believes this statement, he has been accustomed to practice the radical removal of all the chains of lymphatic glands, with practically no attention to the atrium of infection, the tonsil.

I have heard one of the most prominent general surgeons of this country say, in connection with a case of enlarged glands of the neck: "This patient has now had three radical operations on the glands of the neck, the condition always recurring; and knowing that the tonsil, which in this case is diseased, is most probably the source of infection, we will direct our efforts to eradicating this source." I then saw him take a Matthews tonsillotome, ablate the protruding portion of the tonsil and, with a finger and a gauze sponge, curette the remaining portion. This is the usual attention given to this source of infection and, in many instances, even less is done; that is, the interior of the oral cavity is entirely ignored. Again, general surgeons have made statements that, notwithstanding the attention given to tonsils, adenoids, etc., recurrence in the glands of the neck have occurred, when, as a matter of fact, the greater portion of the tonsil was allowed to remain hidden in the supratonsillar fossa, or at the base.

In order to prove the efficacy of the enucleation of the tonsil in causing enlarged glands of the neck to disappear and preventing recurrence of the same, I have made the following tests: Taking a case of bilateral glandular enlargement, in which the tonsils appeared to be diseased, I performed a radical operation on the glands of one side, extending from the stylomastoid region to the region below the clavicle, in the anterior as well as in the posterior triangle, superficial and deep, amounting to forty-six enlarged glands. Some time after the recovery of the patient, an enucleation of the tonsil was performed on the opposite side where the glands of the neck had not been operated on. The patient was placed under the best hygienic, dietetic and climatic conditions and, after six months, returned for examination. I found the patient much improved. The glands on the side where the tonsil was enucleated had disappeared, whereas on the opposite side where the glands had been radically removed, but the tonsil left in place, four glands had become newly enlarged below the sternomastoid muscle. The conclusive evidence that the tonsil is the source of infection of these glands is given by its enucleation. When the glands do not disappear after a tonsil operation, one must assume either of the following conditions to be responsible for this: first, the tonsil was not radically enucleated; second, the infection is from some source other than the tonsil; or third, caseation or abscess formation has already taken place.

The thirty-nine cases of enlarged glands of the neck that I desire to place on record may be briefly analyzed as follows:

Analysis of Cases.—Of the patients, twenty-seven were males, and twelve were females, ranging in age from 3 to 46. Sixteen had radical removal of glands, some, as often as five times. Histologic examination of these glands showed twelve to be tuberculous, and four simple enlargement. Twenty-three patients never had had operation for enlarged glands. Ten had incomplete ton-

sil operations; thirty-six had evidences of tonsillar disease; eight showed distinct lung tuberculosis; five, joint tuberculosis; three, rectal fistulas; twenty-six, family history of tuberculosis; twenty-one positive tuberculin reaction.

Results of Treatment.—Twenty-seven of these thirty-nine patients who had complete enucleation of the tonsils, including the ten who had formerly been incompletely operated on, the stump being removed subsequently, never had any recurrence of enlargement of glands. Among the twelve remaining patients who also had complete enucleation of the tonsils, there was some recurrence of enlargement. These patients were treated along general lines, *x*-ray, hygienic, dietetic, climatic and medicinal with some improvement in that the glands did not break down. The histologic examination of the enucleated tonsils showed true tuberculosis with caseation in one case and, in four, slight evidences of tuberculous disease. The section revealed the characteristic picture of a chronic lacunar tonsillitis.

Apical Tuberculous Infection.—Patients suffering from lung tuberculosis and chronic lacunar tonsillitis improved markedly after complete enucleation. I do not, however, mean to imply that the patient was cured of his lung tuberculosis by the enucleation of the tonsils.

Chronic Bronchitis in Children.—A chronic bronchitis in children which does not yield to the ordinary expectant and medicinal treatment does yield invariably to the enucleation of the tonsils and removal of adenoids.

Rheumatism with its Complications and Sequelæ.—The group of so-called rheumatic affections mentioned in the classification above, which resisted all means of local and general treatment, were either cured or much improved when the tonsils were enucleated. The cardiac complications, to which I desire to call special attention were noticeably influenced for the better. For instance, a patient with loss of compensation with valvular disease which followed each attack of acute tonsillitis in a chronic lacunar infected tonsil, was markedly benefited by the enucleation of one tonsil, and cardiac compensation permanently restored after enucleation of the second tonsil. The analyses of these cases is most interesting and complete histories of them would, no doubt, be of additional value, but space does not permit me to give them. I wish, however, to place on record the cases, numbering twenty, all of which give a history of repeated attacks of tonsillitis, with rheumatism and cardiac complications, these cardiac complications consisting, as a rule, of loss of compensation, following each attack of tonsillitis. The patients vary in age from 8 to 50; fourteen were females and six were males. The last was operated on more than a year ago. All of the patients have remained in good condition since the operation. The primary bleeding was greater and the healing not as prompt in these cases as in cases in which cardiac complications did not exist. There was no deleterious effect noticed on the heart at the time of the operation.

Blood Changes.—In a large group of cases such conditions as chronic septicemia with secondary anemias, in which the symptoms of a low grade of vitality or malnutrition, slight rise of temperature in the afternoon and secondary anemias are present, cures are obtained by the enucleation of the tonsils.

Gastro-Intestinal Disturbances.—Patients suffering from attacks of gastro-enteritic disturbances, such as loss of appetite, constipation, diarrhea and flatulency, which usually are aggravated following the acute attacks of tonsillitis in the chronic inflamed tonsils, are cured by the complete enucleation of the tonsils after other local and general measures have failed. Following acute attacks of tonsillitis in a chronic lacunar inflamed tonsil one not infrequently observes marked symptoms of gastroduodenal inflammation such as jaundice, rise of temperature, loss of appetite, etc., which never recur after complete enucleation.

Parenchymatous Changes.—Nephritis, hepatitis and pancreatitis, which have resisted all other methods of treatment, have yielded beautifully to the complete enucleation of the tonsils and removal of adenoids.

Changes in Special Organs.—Phlyctenula, keratoconjunctivitis, iritis, scleritis and episcleritis, when other methods fail, are permanently cured when the tonsils are enucleated and adenoids removed.

CONCLUSION

My views of the result of the tonsillar enucleation may appear excessively enthusiastic, and perhaps they are; at the same time I must insist that I have mentioned only facts based on actual cases in my practice, which have been observed long enough to justify these conclusions.

Before closing I should like to present a theory as to the raising of the opsonic index of the blood to all infections when the tonsils are enucleated. If, for instance, there exists some pathologic condition of the body, near to or distant from the tonsils, which refuses to yield to the treatment applied to the said condition, if there exists merely a lack of healing power, due, most probably, to the constant absorption of toxic matter from the diseased tonsils, and if this toxic absorption is done away with by the complete enucleation of the tonsils and the pathologic condition heals, is it not reasonable to assume that the drain on the system has thus been stopped and the blood given a chance to become powerful enough to cure the disease in question because of the enucleation of the tonsil? For example, operation is performed several times for osteoperiostitis of the zygoma, but the tissues refuse to heal in spite of all treatment, medical as well as surgical. The tonsils, which are diseased, are enucleated and the disease of the zygoma promptly heals, while every other evidence of marked improvement in the general health is presented. Again, we all recognize the increase in weight and improvement in the general health, especially in children, after the removal of the tonsils and adenoids.

This theory, moreover, applies not only to the tonsil, but to other structures as well; for instance, a man has tuberculosis of the kidney with an external fistula and a hip-joint tuberculosis; if the latter is arrested the patient gains in weight and strength and the fistula and tuberculous kidney promptly heal.

Such results as these are more than mere coincidences and, to my mind, can best be explained by the above-mentioned theory.

2551 North Clark Street.

Causes of Itching in Children.—In making a diagnosis of the cause of itching the age of the patient is an important factor. In children the most common causes are urticaria, scabies, pediculi, and ascarides. The presence of papules and wheals, the history of the lesions appearing "as if the child had been stung with a nettle," are diagnostic of urticaria, while the distribution of a scabies eruption, the presence of burrows on the hands and wrists, and the identification of the acarus leave no room for doubt. Thread-worms are a frequent cause of pruritus ani in children, and when these have been got rid of the itching will be found to disappear. —J. L. Bunch, in *Merck's Archives.*

ENUCLEATION OF THE FAUCIAL TONSILS *

ITS DIFFICULTIES AND CONTRA-INDICATIONS

B. R. SHURLY, M.D.

Clinical Professor of Laryngology, Detroit College of Medicine; Attending Rhinologist and Laryngologist, Harper Hospital; Laryngologist and Otologist, Woman's Hospital and Infants' Home; Attending Laryngologist, Children's Free Hospital

DETROIT

It is indeed a sad commentary on surgical procedure that it should be necessary to discuss at the present day any problem connected with the removal of the faucial tonsil. The fact remains, however, that an investigation of this operation throughout the civilized laryngologic world reveals many widely diverging and conflicting ideas in physiology, pathology, therapeutics and surgery. It is particularly the function of this Section, acting as a higher judicial court, to weigh such problems, and to establish, between enthusiasm and experience, a just and definite scientific basis of practice.

HISTORY AND STATUS OF THE RADICAL OPERATION

A glance at the extensive bibliography of McKenzie shows that tonsillectomy was performed by the ancients, and that Celsus recognized the value of enucleation by the finger.

Writing in the year 10 A. D., Celsus[1] says: "Tonsils which remain indurated after inflammation, if covered by a thin membrane, should be loosened by working the finger round them and then torn out; but when this is not practicable, they should be seized with a hook and excised with a scalpel." Aetius in 480 A. D., takes a more conservative view and advises that one-half the gland or the projecting portion only should be removed.

Borelli, an Italian surgeon of Sardinia, fifty years ago, describes his revival of the method of Celsus as follows:

> The index-finger is placed behind the summit of the gland and by working from above downward with the nail and making traction the tonsil is detached from its bed. A small piece which does not afford sufficient purchase to the finger in order to be torn away is generally left at the inferior part. This is seized with a forceps and separated by a slight movement of torsion.

The admirable historical abstract of the tonsil operation by McKenzie is exceedingly interesting and shows at once that the American furor for complete enucleation is little more than a revival. It is necessary, I believe, to define carefully the terms "tonsillectomy" and "tonsillotomy." Tonsillectomy should be applied to those procedures only which remove the gland with the capsule intact, while tonsillotomy should include all other operations in which some portion of the tonsil remains. Many surgeons who claim tonsillectomy as their favorite method advocate procedures that, in actual practice, leave a considerable remnant of tonsil undisturbed.

For many decades the teaching in the great medical centers of Europe has profoundly influenced American surgery. The waves of radicalism have originated in some foreign university city and swept quickly over our country. To-day the tide has turned, and the idea of radical enucleation of the tonsil is taken back to the home of its birth through American influence.

It has been the pleasure and privilege of many persons in this Section to observe tonsil work in the clinics of the Old World. If your personal experience agrees with mine, you have never seen a tonsillectomy performed in any of these great centers of teaching, except for malignant disease.

It has been my endeavor to obtain the recent views of some of the leading laryngologists of Europe in regard to this question. While in London this summer I asked Mr. Herbert Tilley, Dr. Dundas Grant, Mr. Davis, and others if they performed tonsillectomy. The reply was unanimously against this operation, as it was considered quite unnecessary in England.

It was my pleasure to demonstrate this operation before the postgraduate class of the West London Hospital, where, I am told, the complete enucleation had never been performed. The McKenzie tonsillotome is in general use there; and, usually, in expert hands it removes two-thirds of the gland. Occasionally, an entire tonsil will be removed by this method.

Dr. Logan Turner, of Edinburgh, Scotland, answered my questions as follows:

> In the case of children we still as a rule do tonsillotomy. The exceptional cases are those in which the cervical glands are troublesome, and then enucleation is practiced. I find that hemorrhage during the operation under a general anesthetic is the difficulty. In adults we now usually practice enucleation; as a rule, under local anesthesia plus adrenalin injections. The indications are recurring peritonsillar abscess, tonsillitis, loaded crypts with fetid breath and enlarged glands. And occasionally we get cases of ill health, in which no other etiologic condition can be discovered. If the operation is made complete, we are not usually troubled with postoperative hemorrhage.

In France the punch or snare has come into prominence, and Luc describes his tonsillotomy as follows:

> I have adopted for the last five or six years, the method of our colleague Vacher (of Orleans), consisting, first, in liberating the gland from its adhesions at the pillars, then in seizing and drawing it from its lodge by means of a Museux forceps previously passed through the loop of a cold snare, and finally closing the snare. For that operation I only have recourse to general anesthesia in young children, whereas in the case of adults I simply use local anesthesia by means of injections of a 1 per cent. solution of novocain under the mucous membrane.

Professor Killian says that, so far as he knows, the radical tonsil enucleation is not done in Germany. The operation is done usually without a general anesthetic. The greater part of the tonsil is removed with the tonsillotome or the cold snare. The radical operation is considered only under special indications and is the exception.

Professor Massei, of the University of Naples, a splendid observer, replies as follows:

> In forty years of practice, I have never performed tonsillectomy, and so far as I know, it has never been performed in Italy, particularly by specialists, except for cases of malignant diseases. Personally I believe tonsillectomy (for simple hypertrophy of the tonsils) a fault, not only because I am convinced that the risks of a hemorrhage are more frequent than in tonsillotomy, but also because I think that it is more correct to leave something of the gland. In about three thousand tonsillotomies I have performed, I had only seven or eight severe hemorrhages (one arterial) all controlled by common measures.

If the Austrian methods can be demonstrated by the Viennese teaching in the clinics of Chiari, Hajek, and Koscher, tonsillectomy is rarely, if ever, performed.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Celsus: De Medicina, Cap. 7, Sec. 12.

During my student days the Matthieu tonsillotome without anesthetic was the instrument of choice. The submerged tonsil was never operated on. It is evident, then, that the teaching in all countries except our own, and possibly Scotland, is opposed to the radical operation of enucleation. The two predominating factors that influence the question of conservative or radical tonsil enucleation seem to be, first, the latent doubt of a possible important function which the tonsil tissue may possess; second, the belief that a complete removal is unneccessary. Until these problems are definitely solved by forcible and convincing argument the radical methods cannot become universal.

Physiology has not completely and satisfactorily explained the function of the tonsil. If the normal tonsil has a constant outward current of lymph and secretion, it must have some function in eliminating pathogenic organisms or toxic material from the circulating fluids.

From Richard's admirable collective investigation on the present status of the tonsil operation, in which seventy-seven laryngologists gave their views as to the function of the tonsil, it is fair to assume that science has not definitely settled this question. It is permissible to believe with Bordley, therefore, that these glands in early infancy act as governors over the system of ductless glands and possess an internal secretion from the normal tissue which regulates various ratios of polymorphonuclear and mononuclear blood-cells. We have frequent clinical demonstrations of the relation and association of disturbed conditions simultaneously in the tonsils, the thymus, and the thyroid. We are all familiar with these conditions in the so-called status lymphaticus and sudden death. Numerous examples are on record of hypertrophy of the thyroid gland, together with the faucial tonsils, which hypertrophy subsided on the removal of the tonsils. Three of the prominent causes of exophthalmic goiter are tonsillitis, quinsy, and scarlet fever, all of which greatly disturb the normal function of the tonsil. It is my experience and belief, and that of others, that normal tonsils which produce no symptoms should be left severely alone. This is especially true in early infancy.

DANGERS AND CONTRA-INDICATIONS

As we peruse the literature of this subject, we are particularly struck by the fact that the literary laryngologist is not necessarily the practical surgeon. The dangers and contra-indications of the radical operation are dependent on the experience, judgment, surgical ability and personal equation of the individual operator. The men who persist in giving chloroform, who remove adenoids, and, then, immediately remove the tonsils, and who prefer a general anesthetic in the upright position, must remain in a class by themselves, until some great calamity brings home the fact that their methods of procedure are attended by additional dangers to the patient.

It is necessary to perform tonsillectomy in only one case of pernicious anemia or acute leukemia to impress the individual surgeon and those in his community with the value of a blood examination in all suspected anemias. One case of hemophilia is sufficient to establish the value of a routine examination to determine the coagulation point. One death from chloroform is a life-long lesson in the value of ether.

The dangers and contra-indications may vary from three distinct points of view: namely, observations from (1) the clinic or dispensary; (2) the hospital; and (3) private practice. Again they may vary from the standpoint of the general practitioner and the specialist.

Tonsillectomy is an operation that requires an abundance of time and attention to the details of technic. It is attended by additional danger when performed in the dispensary under the hurry and pressure of work. The most alarming cases of hemorrhage that have come under my personal observation have occurred in patients who were operated on in the office or dispensary, and had returned home. There is less danger of hemorrhage from tonsillotomy with the tonsillotome or snare than from a bungling or imperfectly performed tonsillectomy. Since the complete enucleation has been recently advocated, a great number of general practitioners and specialists have attempted to change their methods and, in learning the new operation, the pillars have been hacked and torn and removed, with a resulting increase in cases of primary and secondary hemorrhage. If the general surgeon, the ophthalmologist, and the general practitioner must remove tonsils, they are respectfully advised to do a tonsillotomy until they may receive instructions, at least in the details of a complete enucleation.

According to my experience, it is impossible to perform more than a dozen tonsillectomies in an afternoon. In some dispensaries the operation is often hurried or neglected in the rush of work. Our most valuable deductions and lasting impressions come from our work on private patients of intelligence. I believe that in this class of tonsil enucleations we establish our best standards of work. The real criterion is determined by the methods we should choose for our own individual cases, and by the postoperative results five to fifteen years later.

We can agree, I am sure, that the average tonsillectomy is attended by a much greater amount of postoperative pain than tonsillotomy. The dangers of tonsillectomy, hemorrhage, shock, traumatism, and death from anesthesia, diminish greatly with a carefully perfected surgical technic and equipment. The disasters that have been reported occurred from the choice of the wrong anesthetic or a failure to loosen the tonsil completely from its bed before its removal was attempted. Ether is the only general anesthetic advisable, in my opinion, although it is contra-indicated in tuberculosis, abscess or other disease of the lung.

From more than 1,000 tonsil operations and from many observations of other operators, I have tried to select a method which insures safety, thoroughness and rapidity in execution. A general anesthetic is administered to children or those older individuals whose personal and peculiar characteristics of fear, nervousness, disposition, or idiosyncrasy to cocain lead one to suspect that the operation with local anesthesia will be difficult or prolonged. In this class of cases an incision is made with Freer's knife, or some equally useful instrument between the anterior wall of the tonsil and the pillar and just below the inferior border of the velar lobe that will allow the finger (preferably) or some blunt dissector to pass outside the capsule. This incision I consider the key to the operation. If it is improperly made, the difficulties of the enucleation may be great indeed. The finger is then passed into the opening and upward, and the velar lobe released from its bed. Firm pressure downward frees the anterior border to the base. The attachments to the posterior pillar may not yield as readily. As gentleness is the rule, a blunt dissector may be of service to release some tougher bands. The

finger is usually successful, however, and the tonsil is absolutely free to the base. A good volsellum now holds the loosened tonsil well forward while a strong snare with heavy wire is slowly tightened along the slightly attached inferior portion of the capsule. If this latter part of the operation is unskilfully performed, the uvula or other muscle tissue may be removed; the pillars may be wounded and the contour and symmetry of the arch lost. This may result in impairment of the voice, or sloughing may ensue.

In many cases of tonsillectomy that have come under observation five to ten years after operation, the fact is evident that the successful result is in direct ratio to the more or less complete removal of the velar lobe.

While tonsillectomy may be indicated in incipient tuberculosis, it is contra-indicated in our climate in the more advanced stages. The dangers of shock, hemorrhage, and anesthetic outweigh the value of the complete operation. Septic arthritis and so-called rheumatism of tonsillar origin may certainly demand a complete destruction of tonsil tissue, yet we must carefully differentiate and classify these cases according to our known etiologic factors. Gout is a distinct disease that is often confused with rheumatism, and many of the phenomena classified as arthritis and rheumatism are the result of dietetic errors or faulty elimination from the gastro-enteric tract. This fact has been frequently and forcibly emphasized by Stucky.

I believe that it is a mistake to make an arbitrary rule that, because a patient has had tonsillitis twice in one year, the tonsils must come out. Many cases classified as recurrent tonsillitis are not such *per se*, but the patients are often the victims of prevailing infections of pneumococcus, influenza, or Klebs-Loeffler organisms that would infect remaining gland tissue in the throat on other occasions when the opsonic index is low. Many of these infected tonsilless individuals present themselves and mournfully proclaim their disappointment. Physicians are frequently called on to correct a mistaken idea that the removal of tonsils will prevent sore throat. The enthusiast and optimist must not claim more than results will justify, until Father Time shall have weighed the problem through a succession of years.

In quinsy the indications are established for complete and total removal as the procedure. When cervical adenitis is present it is necessary to differentiate between the simple and tuberculous forms. Many of these infections are of nasal and nasopharyngeal origin and respond promptly to local and systemic treatment. Those which are of persistent and aggravated type and in direct relation to the faucial tonsil require a complete removal of the cause by tonsillectomy.

When we have carefully weighed all argument in regard to tonsillectomy it is evident that the American laryngologist stands as the exponent of the ultraradical operation. He has revived the teaching of Celsus in every detail. He has led the surgical pediatrist, the ophthalmologist and the general surgeon a lightning pace. He has devised a dainty assortment of instruments, a series of dazzling lights and a line of technic that has left the abdominal surgeon thinking at the half mile house. It is good work and well done, but it is not always necessary. The tonsillotome has not outlived its usefulness. I believe that the general practitioner and the specialist, in selected cases, can use it with great relief and comfort to many patients. When the simple methods fail, tonsillectomy by the expert will destroy any offending tissue that may remain.

CONCLUSIONS

1. The normal tonsil should not be disturbed, particularly in early infancy.
2. Simple hypertrophied tonsils may be removed satisfactorily with the tonsillotome.
3. Pathologic tonsils, especially those of the submerged type that produce well-defined local or general symptoms, should be completely removed within the capsule.
4. In children tonsillectomy requires a general anesthetic, preferably, ether. This should be a hospital operation when possible.
5. Tonsillectomy is an operation that should be restricted to those who are specially qualified.
6. The removal of the velar lobe and the complete separation of the pillars are the most important parts of the tonsil operation.
7. Tonsillectomy is not indicated in all cases of so-called rheumatism.
8. Complete enucleation is usually attended by more pain, a longer period of convalescence and greater danger of infection than tonsillotomy.
9. When tonsillectomy is skilfully performed the hemorrhage is less than when the average tonsillotomy is done.
10. Tonsils which have been involved in recent acute inflammation should not be operated on, until all evidence of the acute condition has subsided.
11. Many tonsils seen by the general practitioner, with every appearance of serious pathologic condition, never develop local systemic symptoms.

32 West Adams Avenue.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. LEVY, BECK AND SHURLY

DR. A. H. ANDREWS, Chicago: Dr. Shurly has given us some excellent indications and contraindications for tonsillar surgery, but my impression is that when the tonsil is sufficiently diseased to demand surgical interference on the part of the specialist, tonsillectomy is the only operation to perform. Many simply enlarged tonsils do not need to be removed, and are enlarged because of the presence within their crypts of cheesy material that is undergoing decomposition. If such a tonsil is simply cleaned out a few times the enlargement will subside; if it does not, then, in my opinion, the tonsil should be removed; and, when I say removed I mean enucleated. I agree with Dr. Levy that we never know the tuberculous tonsil until it is examined after operation. When the patient shows lowered vitality, or any trouble can be traced to the tonsil, the tonsil should be removed.

I have been interested in the change of attitude in the profession toward the relationship between rheumatism and tonsillitis, and it is a change which is not so complete as it will be, and in my opinion should be. I believe that rheumatism has absolutely nothing to do with the production of tonsillitis, but that tonsillitis frequently, though not always, is the cause of rheumatism. The attention of the practitioners and laity should be especially called to this fact.

Regarding other causes for cervical adenitis, we should not forget that the teeth may be responsible for this condition; disease of the sphenoid sinus will do the same, although usually the glands involved in this latter condition are the posterior cervical glands. Perhaps some members of the Section have had cases of inflammation about the wisdom teeth when these were coming through and have noticed the adenitis resulting. This shows that the glands of the neck may be involved and often are as a result of dental disease.

I think that there is no question regarding the raising of the opsonic index by the removal of tonsils; the same may be said of the appendix, disease of the antrum of Highmore, or any other condition in which there is absorption of toxins.

DR. W. E. SAUER, St. Louis: I am not sure that I understood Dr. Beck correctly as to the removal of tonsils in scarlet fever and diphtheria. A number of years ago it was

pointed out that in children in whom adenoids and tonsils had been removed diphtheria and scarlet fever ran a more severe course than in those in whom they had not been removed. At that time enucleation was not being done, of course, and the experience of Fraenkle must not be taken too seriously. However, it is a question to consider. We have not had enough experience to know just what influence the entire removal of the tonsils has in these cases. I agree that the tonsil that is simply somewhat enlarged should be let alone if normal in other respects. We have all seen striking results after removal of the tonsils in cases of rheumatism, but whether or not the removal of the tonsils is going to stop further attacks is questionable, because infection can take place through some other part of the lymphatic chain.

Technic is largely a matter of choice. Some men develop a certain technic along one line, and some along another. I agree with Dr. Shurly that the removal of a tonsil *in toto* is not an easy operation. It requires a great deal of experience and skill to do the operation properly. In many operations the pillars are damaged and the patients are worse off than before the operation. The question of bleeding has been touched on very lightly. In my experience, the bleeding from total enucleation of the tonsil has been decidedly less than from the old tonsil operation. At the time of operation we may run across a spurter but it can be tied.

DR. C. F. WELTY, San Francisco: I believe that tuberculosis of the tonsil is much more prevalent than Dr. Levy has shown by his conclusions. In the microscopic examination of tonsils from cases of so-called lung tuberculosis, I was able to demonstrate the tubercle bacilli in 6 different cases (in fact, in all the patients who were examined), and from this fact I believe that all patients with lung tuberculosis should have the tonsils removed when they are in physical condition to go through the operation. In 4 different cases, I was able to diagnose tuberculous lesions of the tonsils, verified by microscopic findings—all the patients had lung tuberculosis. In 3 cases, tubercle bacilli were found in patients who were supposed to be free from tuberculosis. These cases could not have been diagnosed as tuberculosis from the clinical appearance or history. Comparatively few microscopic examinations have been made at my suggestion, principally because I have not the facilities for carrying such work to an ultimate conclusion. So in summing up I am led to believe that tuberculosis of the tonsil is quite frequent.

In a case similar to the one that Dr. Beck reported, the patient had 4 different extensive gland dissections without removal of the tonsils. The glandular swelling was returning again and the tonsils were enucleated. The glands ceased to enlarge or disappeared entirely; tubercle bacilli were demonstrated in the tonsils as well as in the glands.

In an endemic of diphtheria among the nurses at the San Francisco City and County Hospital, 20 nurses contracted the disease; all had diseased tonsils. There were approximately 20 nurses who had the tonsils removed; none of them had diphtheria. It should be an accepted fact that diseased tonsils predispose individuals to diphtheria, as it is practically always the starting point for such infection. There is another condition to which I wish especially to call attention, and that is "underweight." It will be found that 90 or 95 per cent. of the patients have gained weight following tonsillar enucleation. This statement holds good in cases of "underweight" in which organic disease can be excluded and in fact is one of my own indications for the operation.

I wish to call attention to a series of 200 patients who were examined by the anesthetist prior to operation, showing that 20 per cent. had heart lesions.

I believe that adenoids, and tonsils especially, predispose to the whole group of infectious diseases and in fact everything that may enter by way of infection. No doubt whole chapters of internal medicine will be done over by the work we are engaged in to-day.

As to the difficulties encountered in doing the operation, there are many, when one does not understand the *modus operandi*, which I would liken to a chain made up of links, every one of which must be perfect.

DR. J. E. LOGAN, Kansas City, Mo.: I concur in the main with each of the essayists, but I also desire to add a phase of this subject for consideration which to me is a necessary part of this discussion, viz., the radical extirpation of the pharyngeal tonsil. In my experience, whenever we find faucial tonsils in a state of inflammation or hypertrophy we will certainly find a pharyngeal tonsil in like condition. Whether this pharyngeal hyperplasia be much or little it is more important that it be removed than the faucial tonsils.

DR. O. T. FREER, Chicago: A pathologic condition of great importance in relation to tonsil surgery has not been mentioned in this discussion—I refer to chronic peritonsillitis. This condition is not found in simple hypertrophy of the tonsil, but is a common result of repeated or chronic inflammation of the tonsil, which spreads beyond it into the areolar and muscular structures forming its bed. These recurring inflammatory attacks finally leave a low grade of plastic inflammation which cicatricially unites the tonsil to the tonsillar fossa, firmly joining it to the glossopalatinus and pharyngopalatinus muscles and the fascia of the superior constrictor without. This condition makes enucleation by the finger, or even a blunt separator, an impossibility. Nevertheless, it is constantly being attempted with resulting injury from the violence employed. I have often seen evidences of such violence. A colleague called me in consternation because he had just torn the anterior pillar in two. In another instance both the pillars had been literally rent into shreds; this patient died of sepsis. In another, the posterior pillar had been torn from its bed far down into the pharynx. In many instances, the attempt to enucleate the tonsil bluntly resulted in excessive reaction, fever and prostration. Such results cannot be compared with the comfortable recovery from a clean knife excision of the tonsils such as I described in THE JOURNAL Feb. 13, 1909. While the knife accurately extirpates the diseased organ in a surgical manner, it leaves the surroundings of the tonsil intact, so that the delicate motions of the palate are not in danger of future interference from cicatrices resulting from damage to the pillars. After a long trial I recommend this method most heartily as the only technic required for the total removal of all tonsils whether of the large hypertrophied or cicatricial variety. I have never seen an instance of serious hemorrhage resulting from it, and long ago ceased to use the wire snare because of the rough work it performs in hard fibrous tonsils and the excessive reaction following its use.

DR. F. E. AUTEN, Belleville, Ill.: The tonsils and adenoids are the chief portals through which infection enters the system. The greatest prophylactic measure that has been brought out in recent years is the complete enucleation of these masses, and if it could be possible to enucleate Peyer's patches we would see a great reduction in enteric diseases. I have had seven years' experience in complete enucleation or tonsillectomy and I have never seen an individual who was not benefited and largely so by the operation. I believe that the best tonsil is the one that has been enucleated, just as the best Indian is a dead one. Two of the greatest internists of Berlin advise removal of the tonsils, even in acute muscular and joint rheumatism, to prevent further absorption of toxins into the system. We must remember that the intramuscular spaces and the synovial cavities are a part of the lymphatic system. One can reduce almost to a minimum the diseases of childhood by careful removal of these bodies. The trouble is that often we do not do clean, thorough work.

Two men in this country who deserve great credit for their work in this line are Drs. E. Pynchon and O. Tydings, of Chicago. When Pynchon said that it was not a question of large or small tonsils, but a question of their condition, he did a great deal for the advancement of this work. In 1901 I saw Dr. Tydings do what I think was the first tonsillar enucleation in capsule in America. I think the work of these men, and that of others in Chicago (and Chicago is the center from which this work has spread) have conferred a great favor on humanity. I am an enthusiast on the subject.

DR. M. A. GOLDSTEIN, St. Louis: Those who heard Dr. Mygind's reference to his first work on adenoids will recall his remark that it was ten years after the first scientific presentation of this progressive movement before American otolaryngologists took up this problem in an active way. This showed one extreme of conservatism of American otologists. On the other hand we have had in recent years the radical Killian operation on the frontal sinus and the radical work on the mastoid and it is interesting to follow the evolution of the otolaryngologist's mind on this problem. It has taken nearly a quarter of a century for us to become thoroughly familiar with the indications, the time, when and how, to do the radical or simple mastoid operation in each given case; it has taken nearly a decade for us to determine how infrequently we might operate by means of the radical Killian operation and still benefit our patients. It will also take a certain length of time before we are sure of the time and manner of operation on the faucial tonsils. We have perfected the technic of tonsillectomy, and the proper technic is familiar to every laryngologist, but the time to operate has not yet been so definitely determined. I believe in rational radicalism. I believe that there is a time for tonsillectomy and a time for tonsillotomy. The thymus and glandular tissue which develop in early infancy take care of themselves. The surgeon who operates on the thyroid to-day does not remove the entire gland; he leaves a small section. The faucial tonsil is also lymphoid tissue—it also has a function. With all due deference to Drs. Levy and Beck, I want to compliment Dr. Shurly on having produced a masterpiece of common-sense and good judgment, and I think we will all agree later that there is much food for reflection and much time for hesitation before attempting tonsil enucleation in every case.

DR. BRYAN D. SHEEDY, New York: I note by the literature that very few deaths have been reported in connection with tonsillectomy, yet I believe, judging from the large number of deaths, from 7 to 10, in New York City, an opportunity to record valuable information has been neglected. Last week in discussing a recent death with the coroner's physician and in going over his findings at autopsy, I learned that many of the deaths due directly or indirectly to tonsil removal were those of patients in apparently normal condition until the operation was performed, or at least up to the time that the local anesthetic was used. In London, chloroform is the anesthetic most in use; in America, ether and recently gas and ether are preferred. Latterly, however, a great many nose and throat men have been using cocain for local anesthesia combined with adrenalin chlorid. Local anesthesia for the removal of tonsils is very little used in the German-speaking countries, to-day, and it may be of interest for some to know that the operation of tonsillectomy is not being performed in these countries. In New York City all the recent deaths in connection with tonsillectomy have been in cases in which cocain, with or without adrenalin, was employed. Of the recent deaths autopsies were held in but two of the cases.

DR. HENRY HORN, San Francisco: Following radical enucleation of the tonsils it is possible that some change takes place in the Eustachian tubes producing an exacerbation of an already existing catarrh. I have seen enough cases to be positive that after certain complete enucleation of the tonsils in which the pillars have been somewhat injured there has been some sort of change and a deafness has been increased thereby.

DR. JOSEPH C. BECK, Chicago: Dr. Horn mentioned the effect on the Eustachian tubes of enucleation of the tonsils. My results in 27 cases have been just the opposite of what he describes. That is one of the indications for the operation, tubal catarrh. Dr. Sheedy did not mention any postmortem findings in the cases of death with the employment of cocain, so we cannot speak of that. These reports are of hardly any value when we know how many patients receive injections without any harmful effects. Dr. Shurly has absolutely agreed with me as to the indications and I also said that with rare exception is tonsillotomy done. Many general practitioners do it, but every specialist will prefer to do a tonsillectomy.

I did not mean to say that there are not other portals of infection for scarlet fever and diphtheria, but that when the children who had had the tonsils and adenoids removed had diphtheria and scarlet fever, it was milder in character. Dr. Freer mentioned peritonsillitis; that is known usually, I think, as lateral pharyngitis. That is one of the conditions in which the operation is indicated.

RECENT PROGRESS AND PRESENT STATUS OF EXPERIMENTAL RESEARCH IN CANCER *

LEO LOEB, M.D.
PHILADELPHIA

Not uncommonly the criticism is heard that no progress has been made in our knowledge of cancer. I do not believe this statement to be correct and I fear that it may have a paralyzing effect on those who devote all or part of their efforts to this branch of pathology. I attribute this and similar other criticisms, in part at least, to a lack of contact between the theoretical and practical worker in the field of medicine, and I believe it to be due to a lack of knowledge of what has been accomplished in this field, and also to an underestimation of purely theoretical work on the part of the practical worker in medicine. In medicine not less than in physics and chemistry the most far-reaching advances in diagnosis and treatment follow as a natural result, in a certain sense as a by-product, of new theoretical knowledge and conceptions. But apart from all practical considerations a purely theoretical study of pathologic phenomena is not only a justifiable but a necessary undertaking and can claim the same justification as the theoretical study of other branches of biology.

Cancer investigation has been and still is to great extent purely theoretical, although some if its results are beginning to be applied in the treatment and the diagnosis of cancer. The experimental study of cancer is a rather young branch of science; it is only in the last decade that very extended and continuous studies of an experimental character have been undertaken, although a few sporadic though brilliant attempts had been made previous to that period.[1] But the principal researches before the year 1900 were mainly concerned with the microscopic study of cancer; and although this was and still is a necessary and most valuable line of research, unaided by other means it is unable to give us an insight into the physiology of tumor growth, and the latter is especially needed. In all phenomena of growth the number of unknown and variable factors is exceedingly great and only by formulating new equations can we hope to eliminate some of the variable factors. The experiment alone can accomplish such a task. There are several points of attack on the problem of cancerous growth. Ultimately our complete knowledge of cancer will coincide with our knowledge of tissue growth in general. And

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. I refer here especially to the work of Hanau and Morau. Ten years ago the experimental researches were carried out on a large scale with several sarcomas of the thyroid of rats. In these investigations the tumors were carried through many more generations than in the case of Morau and Hanau, and here systematic studies in the biology of tumor-cells were inaugurated. This work was followed by that of Jensen, who used a carcinoma of a white mouse in his investigations.

from this point of view every contribution to the physiology of tissue growth is a step further in our knowledge of cancer growth, inasmuch as the latter is a special variety of tissue growth and new knowledge of cancer growth will also stimulate and enrich the general biology of growth phenomena.

It is furthermore fully acknowledged that morphologic phenomena of growth are invariably connected with chemical processes and are more or less the expression of underlying chemical and physical changes. Simultaneously with the experimental study, there developed, therefore, a chemical study of cancer, a study of its chemical structure and of its chemical activity, especially of its ferment actions. Furthermore we may include under the heading of experimental investigation of cancer, research in the distribution of cancer and in the factors that lead to the development of cancer among animals, the influence of heredity, environment and possibly of micro-organisms—studies which developed in close connection with the experimental investigation of cancer. Now all these lines of investigation, however young their history may be, have already led to the discovery of very interesting facts. Inasmuch as in the other papers in this symposium several of these special aspects of cancer investigations will receive a more detailed consideration, I shall limit myself here to a general survey.

Thanks to the experimental investigation of the last ten years we are beginning to obtain some definite knowledge concerning the physiology of the tumor cells and of the physiology of growth of the various normal mammalian tissues.

To enumerate a few of the facts which have been ascertained: Tumor cells in many cases can be propagated in other individuals of the same species and on the whole preserve their specific character as cancer cells. This fact at once disposes of various hypotheses concerning the etiology of tumors which have caused much discussion within a very recent period, inasmuch as it proves definitely that tumor cells are not merely regenerating tissue cells, and that they differ in their reactions from regenerating cells; and that the activities of cancer cells cannot be merely due to the peculiarities present in the individual organism in which the tumor originated. With this difference in the physiologic behavior of tumor cells agrees very well the discovery that the ferments of tumor cells differ quantitatively and probably also qualitatively from those of ordinary tissue cells.

On the basis of our present experimental data we have very strong reasons for believing that cancer cells may continue to proliferate indefinitely, so long as they obtain the adequate environmental conditions. And this in turn leads us to revise some of our fundamental biologic conceptions, according to which the germ cells are immortal, while the somatic cells are necessarily mortal. Through these investigations it has become very probable indeed that some at least of our somatic cells also possess the potentiality of an immortal life.

We are penetrating more deeply into those conditions which determine the energy of growth of tumor and of tissue cells. We now know that energy of growth of tumors (the rate of the propagation of their cells) is not a fixed character but is amenable to variations which can be produced experimentally. Experimentally it is possible to increase and decrease the rate of tumor growth. And these experimentally produced changes are transmitted to successions of generations of cancer cells. We have furthermore learned that some experiences which surgeons have had in cancer patients are merely special instances of the more general laws which experimental tumor investigation has established and is continuing to establish.

New and unsuspected properties of cancer cells have been discovered. I might mention here especially their very great capability of recovering from external injurious influences, which may have exerted a markedly depressing effect in their vitality during a certain period of time. The tumor cells possess to an astonishing degree an elasticity which enables them to regain their old vigor, especially after transplantation into another individual.

By selecting for propagation, instead of average tumors, very well-growing tumor cells, it is possible to obtain more rapidly growing tumors, a method especially used by Ehrlich for the cultivation of virulent tumors. I confess, however, that in this case I am not yet certain to which factor the noticeable beneficial influence has to be attributed. These examples may suffice to indicate that we are obtaining outlooks into new fields which were possible only as the result of experimental investigation.

Experimental investigation permits us, however, not only to analyze the activities of the tumor cells but also the conditions in the host on which in part at least, the life of the tumor cells depends. Here also, on the basis of experimental work, very important facts have been found—facts which may appeal to the physician even more than that side of research which we have just spoken of. In this case also I shall avoid going into details and shall limit myself to a few general conclusions.

The transplantability of a tumor depends, first, on the character of the particular tumor and, secondly, on the character of the host. The majority of tumors, as far as we are able to judge at the present time, can be transplanted in the same individual in which the tumor originated; others can be transplanted into individuals nearly related, namely, individuals of the same family; while a certain number grow in a large number of individuals of the same species and a few grow even in different though nearly related species. These facts drew attention to somewhat similar conditions existing in the case of normal tissues—facts that had not received due attention in previous times. They indicate specific relationships, chemical adaptations existing between the body cells and the circulating fluids—adaptations which are of a variable degree of specificity in various cases.

Some individuals of the same species are usually found to be naturally immune to tumor growth; their body cells or body fluids react in such a way that the tumor does not find the suitable condition for growth. Other animals can be rendered artificially immune towards the growth of tumors, by inoculating them with cells of normal organs or with tumor material of the same or perhaps also of certain related species. A very potent immunity can be produced by inoculating living tumor material, the vitality of which has been lowered by previous heating. Such material gives rise to a large number of spontaneously retrogressing tumors after inoculation as I found very early in the course of my investigations. I therefore recommended seven years ago the use of such material for active immunization. Gaylord and Clowes and Sticker were the first to prove the existence of active immunity in animals in which a tumor had retrogressed spontaneously, es-

pecially after tumor material of experimentally decreased virulence had been inoculated. The mechanism of immunization is to be discussed by another essayist and I shall limit my remarks to the statement that, notwithstanding many attempts that have been made in this direction, no serum has been prepared so far which has a decided cytocidal effect and which could be used for the purpose of passive immunization. Active immunization, on the other hand, appears to be much more promising for practical purposes. And attempts have been made to apply in the treatment of patients, some of the results of the experimental investigation in the tumor growth in animals.

We thus see that the first positive results have already been obtained in experimental immunization against tumor growth, a fact of great theoretical and practical significance. Our principal aim, however, which ultimately we wish to realize, is the perfect experimental control of all these conditions under which cancer develops. It might be argued that we are still far removed from being able to produce cancer experimentally; but even such a statement would no longer be absolutely correct. In a certain sense all those cancers which, as we know, arise in a definite proportion of cases in persons affected over a long period of time, by certain external injurious influences as soot, Roentgen rays and other physical and chemical agencies, may be regarded as experimentally produced cancers. And even in animals in a certain number of cases we have been able to create *de novo* malignant tumors, namely, sarcoma, and perhaps also adenocarcinoma by transplanting carcinoma, although in all these cases the presence of unknown variable factors complicates the observations as yet; but notwithstanding this limitation, we have here another instance in which discoveries, although their interpretation may in part still be obscure, promise us an outlook into new fields and a new point from which to attack the problems.

Stimulated by experimental cancer research and again stimulating the latter, of which indeed it forms an integral part, the experimental study of the physiology of tissue growth has led to some interesting results. Of these I shall mention only two achievements obtained within the last few years. Definite chemical substances, namely, amido derivatives of certain aromatic products have been found to be particularly potent in calling forth infiltrative growth of the epithelium into the underlying connective tissue; and infiltrative growth is one of the characteristic features of the cancerous proliferation. A further advance has been made in the analysis of formative stimuli; it has been found that a combination of an internal chemical and an external mechanical factor may exert a specific stimulus on the growth of certain selected tissues to an extraordinary degree; the chemical substance acting as a sensitizer of the tissues, preparing them for the action of the mechanical factor. We may conveniently designate such stimuli as "combination stimuli." In both of these instances we have not yet to deal with the production of true cancers, inasmuch as the growth is only of a transitory character; but in both cases means have been found of analyzing the two most characteristic attributes of cancerous growth, not only in a qualitative, but in part at least, also in a quantitative way.

In conclusion, I wish to draw attention to the fact that the experimental investigation of cancer has already exerted a stimulating effect on some other apparently unrelated fields of science. Thus the last-named investigation into the artificial production of deciduomas promises to clear up, to a great extent at least, the mechanism of the sexual cycle in the female mammalian organism, while certain studies in immunity against tumor growth appear to throw an unexpected light on the etiology of eclampsia.

In presenting this, an altogether incomplete and rather hasty review of some of the achievements of experimental investigation in cancer, it is fair to say that the investigators whose work is referred to are certainly far removed from any inclination to overestimate the results obtained or to underestimate the difficulties facing further progress in this field of science. But I am convinced that the facts elucidated within the last ten years deserve to be known well by the biologist and by the physician.

THE BIOCHEMICAL INVESTIGATION OF MALIGNANT TUMORS AND ITS DIAGNOSTIC APPLICATIONS *

RICHARD WEIL, M.D.
NEW YORK

It is not the object of the present paper to review the entire field of the biochemistry of tumors. Large and well tilled as is this field, it would be tempting but impossible to cover the ground in the brief critique assigned me. That aspect of the subject, in this symposium, therefore has been selected, which appears to be of especial interest and importance for the general understanding of cancer as a disease. The present paper will deal with those investigations which have attempted to elucidate the mutual relationship existing between the new growth and its host, the patient—the biochemical evidences regarding the cause of the cachexia and of the anemia induced by neoplasms, and on the other hand the biochemical aspects of the resistance or the relative immunity, which represents the protective mechanism of the host.

That such a protective mechanism exists in experimental animals is now no longer open to doubt, and there are many facts which seem to demonstrate the occurrence in human beings of a tendency which is similar in kind, even though markedly less in degree. At all events it is possible to place this interpretation on the notable resistance which is shown by some patients to the disease, as manifested by the prolonged well-being and absence of cachexia in spite of considerable tumors, and also by the local conservative processes which in some cases hem in the otherwise relentless progress of the cancer.

The two phases of this subject, as above outlined, which have especially occupied investigation are generally known in the literature as the hemolytic reaction and the antiferment reaction.

THE HEMOLYTIC REACTION

It was long ago suggested by Marchand that the overgrowth of other tissues by malignant new growths was probably due to the presence of some toxic substance in the latter which overwhelms the healthy tissues and impairs their resistance. This same hypothetic substance has been supposed by many writers to pass into the gen-

* From the Department of Experimental Therapeutics, Cornell University Medical School, New York City.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

eral circulation, where it presumably exercises a similar destructive influence on the general tissues, thus inducing the anemia and cachexia so characteristic of the disease. Recently, indeed, metabolic studies have cast some doubt on this belief, but they have, apparently, not shaken its hold on the minds either of the clinician or the pathologist. Biochemical research has been active in the attempt to isolate and identify this hypothetic toxic substance, and the results, even though not entirely satisfying, are at least of much interest. Two agents have been identified in tumors which might be accused of this toxic influence on the somatic cells, namely, a hemolytic substance and a proteolytic ferment. The hemolytic substance has been studied in some detail by Italian investigators, and by members both of Ehrlich's staff and of the Pasteur Institute. In general, these observers are agreed that tumors contain a hemolytic substance which is coctostable and soluble in alcohol, and belong, therefore, in the group of the simple hemolysins. I have succeeded, further, in isolating another type of hemolysin from tumors, which is thermolabile, and requires activation by a substance corresponding to the "endo-complement" which Lyes and Sachs extracted from red blood-cells, and used to complement cobra-venom. The simple hemolysins are chiefly present in necrotic, and the complex hemolysins in non-necrotic tumors.

The questions arise whether these substances pass into the circulation, and whether they are to be regarded as the active agents of the tissue destruction which accompanies malignant growths. On this point it is at present difficult to reach a final conclusion, although there is ample evidence that such a process does with great probability actually occur. In the first place, it has been possible to identify hemolysins in the circulating blood of individuals affected with cancer. It is true that such hemolysins have also been detected in a variety of other conditions, notably tuberculosis, and even that they have been found in apparently perfectly normal individuals. The inference is natural that the artificial conditions under which hemolytic experiments are performed may contribute materially to the resulting destruction of red blood-cells, whereas it is perfectly conceivable that the vital conditions which they seek to imitate may be entirely free from any such results. A test-tube is not a blood-vessel, nor is two hours in an incubator followed by sixteen hours in an ice-chest the natural habitat of a red blood-cell. I have attempted to meet this objection by incubating a mixture of hemolytic dog serum and of alien dog's cells in the ligated vein of another dog, and have found that hemolysis occurred in the same manner as it did under ordinary experimental conditions. There is, however, a far more potent reason for concluding that these hemolysins are under certain conditions active agents of destruction during the life-time of the individual. This is to be found in the character of the red blood-cells of the cancer patient whose own blood is hemolytic. It was first pointed out, I believe, by Chanel,[1] in 1880, that the red cells under certain conditions of disease become altered in their resistance to certain destructive agents, namely salts in solution. Since that time, a succession of careful investigators, such as Lang,[2] have shown that especially in advanced cancerous conditions there is a very marked increase in the resistance of the red cells to anisotonic solutions of common salt. During the past year, Kraus[3] and his co-workers in Vienna determined that the red cells of rats affected with carcinoma became extremely resistant, as compared to the normal, against the hemolytic action of cobra-venom. They also found a similar change in the corpuscles of a large proportion of human subjects of cancer. This is an observation which I am able fully to corroborate from a large series of tests. In other words, the corpuscles of cancerous individuals manifest a marked resistance to such widely varying hemolysins as cobra-venom and anistonic salt solutions. What is the significance of this change? It was pointed out for the first time by Morawitz and Pratt[4] last year that the injection of phenylhydrazin, a markedly hemolytic substance, into rabbits, produces a severe anemia but that in addition to this, a very remarkable phenomenon supervenes. The red cells of the animals treated in this fashion become excessively resistant, one might almost say immune, to a large variety of hemolysins, including distilled water, saponin, snake-venom, etc. I have found that the same phenomenon could be produced in a much more specific manner by the continued injection into rabbits of graduated doses of saponin, which also results in the marked anemia, and in the production of a race of cells specifically resistant to saponin, but to no other hemolysin.[5] The same characteristic specific resistance may also be produced by the injection of eel serum (Kossel[6]). It was suggested by Pratt and Morawitz that this result was due solely to the direct action of the dissolved hemoglobin of the disintegrated red cells on the stroma of the remaining cells. This explanation, however, does not seem sufficient, for the reason that this sort of resistance is never found in simple primary anemias, even the severest types of pernicious anemia, and practically in none of the secondary anemias except those of cancerous origin. On the other hand a very instructive analogy may be found in the experiments made by Ehrlich[7] with trypanosomes. He discovered that by the continuous injection of a trypanocidal substance into the host he was able to produce a race of organisms specifically immune to the poison injected, but still susceptible to the destructive action of other agents. Thus he produced "fuchsin-feste" strains of trypanosomes. The explanation is probably to be sought in a modification of the race by the survival of the fittest—in this specific instance of those individuals resistant to fuchsin, or, as Ehrlich puts it, "deprived of their receptors for fuchsin." In the same way, it is probable that the hemolysin above described destroy the more vulnerable erythrocytes, leaving a non-resistant type, and that this result tends to be perpetuated by a similar action on the generative cells in the bone-marrow.

Whatever be the explanation, the fact remains that anemia of marked grade, with normoblasts in circulation, and the development of a race of resistant erythrocytes can be induced experimentally only by the repeated injection of hemolytic substances. In human pathology, the only anemia which corresponds identically to these criteria is the anemia of cancer; it is, therefore, fair to assume that some hemolytic substance is the agent in its production. If now, the fact be recalled that a hemolysin can be extracted from cancerous material, and that in a considerable proportion of cancer cases a hemolysin

1. Chanel: Thèse de Lyon, 1880.
2. Lang: Ztschr. f. klin. Med., 1902, xliii, 106.
3. Kraus, Pötzl, Ranzi and Ehrlich: Wien. klin. Wchnschr., 1909, xxii, 1027.
4. Morawitz and Pratt: München. med. Wchnschr., 1908, lv, 1817.
5. Weil: Proc. Soc. Exper. Biol and Med., 1909, vi, 49.
6. Kossel: Berl. klin. Wchnschr., 1898, xxxv, 152.
7. Ehrlich: Harbin Lectures, 1909.

is found in the circulating blood,[8] the chain of evidence seems fairly to establish the belief that the anemia of the disease is caused by this hemolysin, and that the resistance of the corpuscles is traceable to its action.

What, if any, are the diagnostic applications of this apparently characteristic biochemical feature of the growth of cancer? I showed,[9] some years ago, that in dogs experimentally inoculated with lymphosarcoma, the interaction between the hemolysin within the blood and the blood cells themselves resulted in a very characteristic condition. The serum of dogs with tumors was found to be hemolytic for the red blood-cells of normal dogs but not for the red cells of other dogs with tumors; in other words, the latter had become immune to the hemolysin. Thus, in dogs a specific diagnostic criterion was established for the presence of tumors, depending essentially on the resistance of the red cells to the circulating hemolysin. To avoid a confusion which has vitiated a large proportion of the literature on this subject, it should be realized that this method differs essentially from the simple determination of the presence of isohemolysins in the serum, as practiced by Maragliano, Ascoli, and others. Very shortly after the publication of this fact, Crile applied the method to the analysis of human serums and reached the conclusion that it afforded practically an absolute diagnostic criterion for human cancer, in exactly the same manner as had been described for dogs. I have not been able to confirm these findings. In my study of human serums, I found that 26 per cent. of the non-cancer cases gave the type of reaction found to be characteristic of tumor in dogs, while on the other hand only 56 per cent. of the cancer cases gave this reaction. Obviously, such a result cannot be considered a specific, or even a diagnostic reaction. This view has received the support of a large number of careful investigators—Richartz,[11] Whittemore,[12] Janeway,[13] Smithies,[14] Blumgarten,[15] Epstein and Ottenberg.[16] Nor has it fared better with the so-called "reversed hemolytic reaction," which Crile described as differentiating the serums of tuberculous from those of cancerous individuals. I believe, therefore, that it may now be considered as settled that in human beings the "hemolytic reaction" as a test for the presence of carcinoma is not diagnostic. A positive reaction does, however, occur in cancer cases with more frequency than in non-cancer cases, and may, therefore, be cautiously considered in connection with other symptoms as an auxiliary to the diagnosis.

THE ANTITRYPTIC REACTION

The antitryptic reaction is another illustration of interaction between the tumor and its host. It was first shown by Salkowski that the various tissues contain proteolytic ferments, and in 1902, Petry found that such a ferment could be demonstrated in carcinomas. The demonstration of this fact is very simple, depending on the digestion of a proteid such as milk, egg-white, or gelatin, by the tissue extract, and has been thoroughly carried out by Buxton and Shaffer. The function of these ferments is still somewhat doubtful, but it seems eminently probable that they play an important rôle in the metabolism of the tissues. In cancers, these ferments occur in relatively large amounts, which is, perhaps, in accordance with the view of Vernon, that the quantity of ferment contained by a tissue is in direct ratio to its vital activity. Until very recently it was a matter of grave doubt whether these intracellular ferments of the tissues could exercise any direct influence on the general organism. Opie[17] has succeeded in showing, however, that in certain pathologic conditions there is clear evidence that ferments may pass into the circulation, as shown by the fact that there is then a reactive formation of appropriate antibodies, or antiferments. In cancer, the conditions are extremely favorable to the liberation of the intracellular ferments, since there is generally a certain amount of necrosis and cellular destruction. It is not surprising, therefore, that search should have been made in the blood serum for evidence of an antiferment to the ferments liberated by this cellular disintegration in cancers. The difficulty of this problem has lain in the fact that all normal serums contain an antiferment, or "antitrypsin," as it usually is called, so that any reaction due to cancer could, apparently, make itself manifest only as a quantitative variation in the amount of antitrypsin normal present. The quantitative estimation of antitrypsin, however, even in very crude form, has only very recently become possible, largely owing to certain modifications of technic introduced by Brieger and Trebing,[18] and by Bergmann and Meyer.[19] As a result of this work, Brieger and Trebing were able to announce in 1908, that they had discovered evidence of an increase of this antiferment, or "antitrypsin," in the blood of cancer patients; that it occurred in a very high proportion, even as high as 95 per cent., of the cases of cancer, and that it rarely occurred in any other condition. The method of which they made use was to test the inhibitory power of graduated quantities of the blood serum on the digestive action of definite solutions of commercial trypsin. All serums, as had long been known, exercise an inhibiting action, but they found that it was characteristically and markedly increased in cases of cancer. Very soon, however, it appeared that they had overstated their case. An increased inhibitory action of the serum—or, technically, an increased "antitryptic index"—was found to occur not only in cancer, but in many of the infectious diseases, such as typhoid and tuberculosis, and in certain other conditions, such as the anemias and Graves' disease. It has, therefore, come to be understood that the antitryptic reaction may accompany a number of widely differing pathologic conditions; on the other hand, it is also true that its occurrence in cancer is so general as to make it a striking symptom of this disease.

A great obstacle to the general application of the method and to the further analysis of the phenomenon has been the inherent difficulty of obtaining even moderately accurate results; and this holds true both of the

8. Moss (Bull. Johns Hopkins Hosp., 1910, xxi, 63) has recently asserted that he can determine no difference in the hemolytic power of cancerous, as compared with non-cancerous individuals. This finding is not in accord with that of other sera. But even were it true that the hemolysis could never be found in the serums of cancer patients, the characteristic alterations in the resistance of the red cells would still strongly suggest the action of such a substance, and its disappearance from the serum would be attributable to its absorption by the red cells, just as most toxic substances injected into the blood disappear from the serum and unite with the tissues for which they posses the strongest specific affinity.

9. Weil, R.: The Hemolytic Reactions of the Blood in Dogs Affected with Transplantable Lymphosarcoma, Arch. Int. Med., 1908, i, 23.

10. Crile, G. W.: The Cancer Problem, THE JOURNAL A. M. A., June 6, 1908, p. 1883.

11. Richartz: Deutsch. med. Wchnschr., 1909, xxxv, 1340.

12. Whittemore: Boston Med. and Surg. Jour., 1909, clx, 77.

13. Janeway: Ann. Surg., 1909, xlix, 27.

14. Smithies: Med. Rec., New York, 1909, lxxvi, 901.

15. Blumgarten: Med. Rec., New York, 1909, lxxv, 61.

16. Epstein, A. A., and Ottenberg, R.: The Diagnostic Value of Hemolysis in Cases of Cancer, Arch. Int. Med., 1909, iii, 467.

17. Opie: Proc. Soc. Exper. Biol. and Med., 1910, vii, 99.

18. Brieger and Trebing: Berl. klin. Wchnschr., 1908, xlv, 1349, 2260.

19. Bergmann and Meyer: Berl. klin. Wchnschr., 1908, xlv, 1397.

serum plate and of the casein methods. (Trebing[20]). This difficulty has been obviated by an alteration in method, which I introduced in collaboration with Dr. S. Feldstein, whereby it becomes a simple matter to make extremely delicate and accurate estimations of the antitryptic content of serum. (Weil and Feldstein[21]). The alteration consists in determining the degree of digestion by an instrument which measures the change induced by digestion in .the viscosity of gelatin. Furthermore, the viscosimeter has made it possible to penetrate very much further into the character of the "antitryptic" reaction. It has already been stated that the inhibitory power of the serum has always been tested against commercial trypsin. This, it may be said, is generally derived from the pancreas of the pig. We have prepared proteolytic or "tryptic" enzymes from a variety of human organs, such as liver and kidney, and also from carcinomas, and have tested the inhibitory activity of the serums not only against commercial pig's trypsin, but also against these various human trypsins. The result is very striking. It appears that each serum has a definite, and distinct, inhibitory value for each of these "trypsins." These values may arrange for the same serum from 5 per cent. of inhibition for one "trypsin" to 95 per cent. for another, while a second serum may reverse this relationship. It is, therefore, evident that the conditions are very much more complex than had hitherto been suspected, and that it is entirely inadequate to speak of the "antitryptic" value of a serum. Indeed, it seems impossible to avoid the conclusions that there are differences between these various proteoclastic enzymes, or "trypsins," as has already been suggested by Vernon and by Abderhalden, and that for each of them the serum may contain distinct antibodies. In general, these studies show that the inhibitory values of human serums for ferments derived from human liver and kidney vary but slightly, while the values for commercial trypsin, and for human pancreas, and cancer extract show very pronounced and decided differences. The measurements by the viscosimeter have amply confirmed the belief that serum from cases of cancer show an increased inhibitory value against commercial (pig's) trypsin. This increased index is, however, by no means universally present. In the group of cancer cases, it does not hold for new growths of ectodermal origin, including those of the larynx and esophagus, no matter how far advanced the resulting cachexia. Nor does it hold without exception for all glandular cancers. A very striking feature of almost all of the cancer cases hitherto tested by us has been the enormous reduction of inhibition for the ferment extracted from human cancers, which falls far below that found in most of the control cases, and contrasts strongly with the increased inhibition for trypsin. The biologic significance of these facts is at present obscure, and it seems wiser not to speculate on them.

The diagnostic application of the antitryptic reaction has received a great deal of attention in Germany and England. The general consensus of opinion maintains that it furnishes a very valuable aid in the diagnosis of cancer, especially if certain complicating factors, such as tuberculosis, can be excluded. As has been shown, the fact that an increased antitryptic index may occur in certain other conditions deprives the reaction of its specific character; but although this diminishes, it does not destroy the value of the test as a clinical adjunct. The use of the viscosimeter will, I believe, very materially further not only an understanding of the reaction, but its practical applicability and value. Moreover, the use of cancer ferment has added a further criterion, which much more sharply and characteristically defines the serums of cancerous individuals. It is, therefore, certainly not too optimistic to express the hope that still further refinements of technic may develop a reaction of specific value.

The scope of this paper does not permit an exhaustive discussion of the numerous so-called diagnostic reactions for cancer which have developed on the analogy of the well-known specific reactions of immunology. Among these are included a precipitin reaction, a complement deflection test, and an anaphylactic method; none of them has been proved to be of value. Finally, Ascoli has recently suggested a reaction based on the diminution of surface tension when antigen and antiserum are brought together, the "meiostagmin" reaction, but although the early reports are encouraging, it is still too soon to decide as to its merits.

163 West Eighty-sixth Street.

20. Trebing: Berl. klin. Wchnschr., 1909, xlvi, 2296.
21. Weil and Feldstein: Proc. Soc. Exper. Biol. and Med., 1910, vii.

THE RELATION OF HEREDITY TO CANCER*

E. E. TYZZER, M.D.
BOSTON

That the development of malignant tumors—commonly grouped together under the name of "cancer"—are the manifestations of inherited peculiarities is a conception probably less generally held than formerly. For a time the subject of heated controversy, the question of heredity with reference to tumors has received little attention in recent years. It seems quite possible that the dictum of the statistician has been too readily accepted, and it is not improbable that something may be learned by a further inquiry and a utilization of certain recently established laws of inheritance.

In inheritance we have to deal with the transmission of certain characteristics, which may be visible, as in the case of coat pigmentation in animals, or invisible, such as those exemplified in physiologic peculiarities, temperament, wildness, etc. Tumors belonging to the group to which the term "cancer" is applied occur most frequently late in life so that, strictly speaking, it is the question of the inheritance of a predisposition to cancer with which we have to deal rather than the inheritance of cancer itself. Most of the characteristics which have been dealt with in the study of heredity appear in the course of development of animals under ordinary conditions of environment. Only the intrinsic factors affecting development are thus considered in the study of heredity.

In the etiology of cancer, however, it is necessary to consider also extrinsic factors, for the frequency with which malignant tumors occur as the result of chronic processes, such as are produced by repeated exposure to the *x*-ray, to heat, to certain chemical irritants, and to mechanical injuries, has been definitely established. With definite knowledge of the influence of external conditions in the development of certain types of tumor, should we therefore ignore the intrinsic factors in the development of all tumors?

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

The occurrence of several cases of cancer in a single family often leads the physician to conclude that the condition is based on an inherited peculiarity or "taint." Whether or not the conclusion is correct, it is impossible to establish the fact on isolated observations in the experience of the physician. Cancer not infrequently occurs in several closely related individuals, and even the same organ may be affected. Thus Cullen has reported an instance of uterine cancer in three sisters. It is difficult to believe that such instances are of the nature of coincidences.

Most of the systematic investigation of the question has been of a statistical nature. Statistical inquiry has in practically every instance been undertaken with the object of determining whether the incidence of cancer is greater in the families of cancer patients than in the families of non-cancerous patients. This method of investigation has furnished results that are often diametrically opposed.

Paget, an ardent advocate of the importance of heredity in cancer, maintained that cancer occurred much more frequently in the antecedents of cancer patients than in the antecedents of the non-cancerous. Employing the statistical method, certain investigators obtained results similar to those of Paget while others failed to find a greater incidence of cancer in the families of cancer patients.

The results of the more recent statistical investigations are opposed to the importance of heredity in cancer. Pearson, working with data furnished by Hillier of the Middlesex Hospital, found in the antecedents of 2,368 women with cancer, 359 with a history of cancer, and in the antecedents of 753 non-cancerous women, 102 with a history of cancer. With a probable error of 0.04, the coefficient of 0.0335 for the cancer heredity is opposed to the inheritance of this condition. Pearson states that although these results are not final, they tend to show that there is no marked inheritance.

Bashford found in the data obtained from 669 cases of cancer that there was cancer in the father in 58 cases and in the mother in 114 cases. These proportions of 1 to 11.5 in the fathers and 1 to 6 in the mothers are almost identical with those obtaining for the general population dying from all causes. Guillot has obtained similar results. He found a history of cancer in 10 per cent. of the antecedents of non-cancerous and in 17.4 per cent. of the antecedents of the cancerous hospital patients. He found that a greater proportion of the parents of the non-cancerous were still alive and, revising his figures on this basis, he estimated the incidence of cancer in the antecedents of the non-cancerous as 16 per cent., against 17.4 in the antecedents of the cancerous. His statistics obtained from city records showed cancer in 18 per cent. of the non-cancer antecedents and in 16.6 per cent. of the cancer antecedents. Most of the recent statistical inquiry has, therefore, tended to disprove the heredity of cancer.

Another mode of inquiry has to do with the frequency of cancer in certain families—a phenomenon which is quite generally recognized. For example the famous "family of Madam Z" reported by Broca, in which there were fifteen deaths from cancer in twenty-six offspring who attained the cancer age. Of seven males, one had cancer while in nineteen females there were fourteen cases. The subsequent history of this family is at the present time being followed up by Ledoux-Lebarde. Statisticians, however, point out the great rarity of such families and, from a consideration of the general distribution of cancer in the population at large, regard their occurrence as falling within the law of probability. A more comprehensive historical review of the investigations of the subject of heredity with reference to cancer will be found in a communication by Ledoux-Lebarde.[1]

In statistical inquiries of this sort there are so many contributing factors that the results obtained are of slight value. It is in the first place a most difficult matter to obtain facts concerning the occurrence of cancer in antecedents. Not only are the histories unreliable, but the interpretation of the statements may be a matter of dispute. As Lebarde has pointed out, the cancer and non-cancer series should correspond with regard to age, sex, country, etc. Taking the age factor as an example, cancer would be expected to occur more frequently in long-lived than in short-lived individuals. On the whole, the statistical inquiry of the subject under discussion has proved rather unsatisfactory. This method has furnished results which, though far from conclusive, indicate that heredity is of no great importance in the incidence of cancer. I believe however, that this form of investigation is open to criticism from the failure to recognize that under the term "cancer" are included a greater number of non-related conditions. It would mean much more if the incidence of each type of tumor was taken up separately. Thus, the occurrence of a number of tumors of a single type in a given family would mean much more than an equal number of tumors of various types and organs.

With certain types of tumors, the importance of the heredity factor appears to be definitely established. Thus it is well known that melanosarcoma, known to occur in horses of other color, is much more frequent in gray horses. It has been noted that nearly all the offspring of certain gray stallions have developed melanosarcoma.

The condition known as xeroderma pigmentosum is often found in several members of the same family and in this condition light apparently has an injurious effect on the tissues. As the process continues the epidermis becomes greatly modified and cancer frequently develops. It is evident that for this condition an inherited peculiarity is necessary as well as the light-rays. It frequently occurs in brothers or sisters, but as the individuals either die before maturity or are terribly disfigured the condition is not ordinarily transmitted from generation to generation.

In a third condition, known as von Recklinghausen's disease, heredity is evidently an important factor. About one-fourth of the patients give a history of the occurrence of the condition in the other members of the same family. Harbitz reports this condition in five consecutive generations of a single family, nine individuals in all. The condition is characterized by multiple fibromas situated along the peripheral nerves, and in the skin, associated with anomalies of pigmentation. There are also frequently other anomalies and mental defects. In addition to the typical cases, there are often other patients in the same families who present certain of the features just enumerated, but in whom the condition is not well defined. The fibromas often recur when excised, but are usually cured by repeated excision.

In certain cases the tumors take on more rapid growth, acquiring a sarcomatous nature. These individuals also frequently present tumors of other types—carcinomas, leiomyomas, etc. There is little doubt that in this dis-

1. Ledoux-Lebarde: Bull. de l'Assn. franc. p. l'étude du cancer, 1908, xcii.

ease we have a distinctly inherited condition in which the individual not only develops multiple fibromas, but is also prone to more malignant tumors.

The experimental aspects of the study of heredity with reference to cancer have been for the most part neglected. In a former communication I called attention to the frequency of tumors of the lung in certain families of mice, and suggested further lines of work in the experimental breeding of short-lived animals. Bashford has recently taken up this problem along similar lines. In the offspring obtained by the inbreeding of mice with mammary tumors, he has as yet failed to find evidence of any increase in the incidence of these tumors, although the investigation is not yet complete.

Whether epidemics of cancer in mice such as have been reported by Borrel, Michaelis, Gaylord, and others are to be attributed to heredity is a question which yet remains to be solved. Borrel states in substance that actual experience is wholly opposed to the notion of a cancer heredity in mice. In a recent article I have shown the great frequency of tumors in a given family, the offspring of a single female with a tumor of the lung. In this family sixty-five mice attained the age of six months and of these twenty, or 32 per cent. presented tumors. In seventeen, the tumors were of the same type as the tumor in the parent (homologous inheritance). On dividing the offspring into two groups, one composed of those neither of whose parents had a tumor, the other composed of those of whose parents had a tumor, it was found that tumors were more frequent (39 per cent.) in mice with a tumor parent than in mice with parents without any tumor (13 per cent.) It is my opinion that results obtained from the experimental breeding of short-lived animals will throw more light on the question of heredity in cancer than is possible by the use of the statistical method with human beings. Even with animals the problem is a difficult one, but here it is possible to obtain facts instead of depending on the statements of patients for data.

Differences in the susceptibility of various races of mice to the inoculable tumors have been noted by various observers. Environment is believed to account for these differences in certain cases. Whether heredity accounts for racial differences in other cases has been left undetermined.

I have found that such racial differences are inherited and persist in mice kept in the same environment. On cross-breeding a mouse of a susceptible with one of an insusceptible race, I have found the hybrids as susceptible as the susceptible parent. Furthermore, the growth of the tumor is more rapid in these hybrids. On breeding the hybrids together their offspring in all subsequent generations are found to be invariably insusceptible. By cross-breeding, therefore, a character apparently accentuated in the first filial generation fails to appear in subsequent ones. Inasmuch as the growth of the inoculated tumor depends on a transplantation of tumor cells, inherited differences in susceptibility to the inoculated tumor will have no bearing on tendencies to develop tumors spontaneously. Thus mice which have been found insusceptible to inoculate tumors may later on develop in certain instances spontaneous tumors.

Cuénot found that there was no correlation between inherited characters such as pigmentation, waltzing, etc., and susceptibility to the inoculable tumors. I have found that this is also true of the spontaneous tumors in mice.

CONCLUSIONS

In conclusion it may be said that heredity plays a rôle in the general incidence of cancer with regard to species as is indicated by the frequency of mammary tumors in mice while they are rare in cattle which, however, frequently develop primary tumors of the liver and adrenal (Bashford).

The question whether tumors are inherited as such is not raised by modern investigators. Statistical inquiries concerning the inheritance of a predisposition to cancer lack accuracy, and are surrounded by almost insurmountable difficulties. The results of these investigations fail in most instances to indicate the inheritance of such a disposition.

The occurence in rare instances of families in which cancer is notably frequent appears to be well established. The occurrence of these families is regarded by many as not remarkable, but as wholly consistent with the law of chance in the distribution of cancer throughout the population. Others point out that if the occurrence of cancer families is established, the question of heredity will not be solved for peculiarities of environment are not eliminated. In melanosarcoma in gray horses, and in both xeroderma pigmentosum and von Recklinghausen's disease heredity appears to be an important factor.

Although much of the evidence collected tends to indicate that heredity is not an important factor in the development of cancer, it would appear that this question cannot be definitely settled without the use of more accurate methods than have heretofore been employed. For this work the importance of the experimental breeding of animals cannot be overestimated, for here it is possible not only to obtain accurate data, but to shape the course of the experiment.

21 Fairmount Avenue, Wakefield.

RECENT PROGRESS IN SURGICAL TREATMENT OF MALIGNANT GROWTHS *

JOSEPH C. BLOODGOOD, M.D.
BALTIMORE

The problem assigned to me is strictly a practical one, and if there has been any recent progress in the surgical treatment of malignant growths, it has been due to the fact that a number of surgeons have been critically investigating the accumulated evidence of years of experience in the results of their interventions to eradicate malignant disease.

The best results have been obtained only in those cases in which there has been a painstaking study of the pathologic picture, an exact record of the extent of the operation, or other methods of treatment, and of the ultimate results.

In my opinion the recent progress has led to a better conception, not only of the pathologic varieties of the different neoplasms, but also of their local growth and tendency to metastasis.

Surgeons are beginning to learn that in some instances the extent of the local operation must be increased, while in other cases the patient is assured of a permanent cure with a more restricted operation, which, when

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

the neoplasm is situated in some regions, accomplishes this cure with less mutilation.

It is also my view that there has been recent progress in the fact that surgeons recognize that in many instances malignant disease may have its onset in lesions, which may be present a varying length of time, and during that time be comparatively benign.

BENIGN TUMORS

A large number of benign tumors, the existence of which is known to the host for months or years, in the past have been left alone until they have shown signs of growth, or even until they have assumed the definite clinical picture of malignancy. There is no question that the best time to intervene is during the benign stage. On this fact both the public and the profession need education. Here we need publicity.

I have in the discussion at the symposium on cancer of the skin before the Section on Dermatology brought out the fact that up to the present time there is, to my knowledge, neither among my personally studied cases, nor recorded in the literature, an undoubted permanently cured example of the malignant pigmented mole. To prevent this malignant tumor it is necessary for the public to know that apparently innocent moles may at any time, especially after 30 years of age, show local growth, and this local growth is so quickly followed by dissemination of the cells, that up to the present time no operation yet performed has eradicated the disease. Physicians constantly see these moles in the routine examination of patients for other conditions, but it is only recently that they have begun to advise their removal. In my experience the majority of the profession at this time do not consider seriously this view of the benign mole.

In my paper before the Section on Dermatology, I have presented evidence to urge the immediate removal of certain epidermal and dermal tumors which have a varying period of innocence and which may be either of congenital or later origin. In this stage it is sufficient to remove the tumor with a small zone of uninvolved tissue. These tumors are, with rare exceptions, circumscribed, and there should never be any difficulty in removing them without leaving residues behind. There is sufficient evidence also to make it very clear that it is better to leave such a benign tumor alone than to excise it partially.

In the same paper I have ventured to make the statement that excision with the knife is the best method. There are, however, many advocates of other means of getting rid of the dermal tumor—the *x*-ray, radium carbon-dioxid snow, caustics, the Paquelin cautery, the electric needle, etc. There is no doubt that these methods, when properly employed, do eradicate the disease. From my experience, however, I cannot but conclude that as compared with excision with the knife, these methods have elements of danger in certain cases. I am willing to admit that incomplete excision with the knife is more dangerous than the treatment with any of the above other methods, but there is no necessity for an incomplete removal with the knife if the operation is to be performed at all. There are some cases of benign dermal lesions, which, on account of their situation on the alæ of the nose, eyelid, and the ear, when subjected to excision would leave a somewhat greater deformity than when treated by one of these other methods.

The accumulated evidence of years has shown that it is dangerous to trifle with some of these apparently innocent dermal and epidermal tumors. Space forbids a detailed account of the questions in this problem, but I am anxious to record here that before undertaking the treatment of an apparently innocent epidermal or dermal tumor the operator should know what the tumor is.

If it is agreed to enlighten the public on the fact that all apparently innocent tumors, wherever they may be situated, should be investigated by one having sufficient knowledge to properly treat them, then we should resolve as quickly as possible on the best method of treatment. There is absolutely no objection to excision with the knife, except the resultant scar when the lesion is situated in certain localities, and it has been my experience that in the hands of a properly trained surgeon the scar here is no more of a defect than when the lesion is removed by other methods. It is well to mention that in some instances, on account of the position of the tumor, the surgeon feels that the scar will be less if the margin of healthy tissue is kept within narrower limits. Here the knife should be replaced by, or combined with, the cautery. This is true of the basal epithelioma of the face when situated near the nose, eye or ear.

I trust that in emphasizing the importance of the removal of tumors in their innocent state, I have placed in equal prominence the fact that the lesion must be properly removed.

Apparently there are other lesions which hold the same relation to malignant tumors as the benign tumors.

TRAUMA AND SARCOMA

From the beginning of the literature on sarcoma, investigators of the clinical type have been impressed with the frequency with which sarcoma follows trauma. Trauma, with its local effect—the wound, and the wound always associated with the inflammatory process, which gives rise, first, to granulation tissue, and then to scar tissue—is an every-day occurrence. Both physician and patient concern themselves with trauma and wounds only when the immediate local conditions demand attention. The various open wounds give rise to the problems of preventing and treating infection and the question whether the wound should be closed or not. Fractures and dislocations always force immediate attention. But the contused wound with unbroken skin and without fracture or dislocation, or injury to a great vessel or nerve, or without extensive rupture of muscles or tendons, receives only the attention that the patients demand on account of discomfort or loss of function. With the rarest exceptions it is after a wound of this character (contusion) that sarcoma develops.

After the injury there may be only slight swelling and discomfort, or not even that; then later, after weeks or months, a swelling develops, which finally assumes the picture of a sarcoma. In other cases there is considerable swelling, due to a hematoma or a more diffuse extravasation of blood. In a few cases this swelling may never completely disappear, but later the signs of sarcoma develop. In other cases it does disappear, and there is a free interval between this and the development of the secondary symptoms due to the sarcoma.

The sarcomas which develop after trauma are usually situated within muscle or bone, either periosteal or medullary. There are also benign lesions, which may be secondary to trauma—the organized hematoma, the different forms of myositis, especially the ossifying

myositis, and the interesting desmoid tumor of the abdominal wall following trauma to the rectus muscle during labor. In the bone there is a distinct ossifying periostitis of traumatic origin. Both tuberculous and pyogenic osteomyelitis may be secondary to trauma. Trauma often localizes the syphilitic gumma or ossifying periostitis.

The point that I wish to emphasize is that the physician should constantly bear in mind the late effects of trauma. The immediate effects of trauma as a rule speak for themselves. The now routine *x*-ray examination discovers the latent fracture, but rarely if ever are physicians and surgeons keen in searching for the late effects of trauma. In the experience of the surgical clinics throughout the world the first appearance of a sarcoma weeks or months after trauma is rarely appreciated until the patients themselves demand investigation.

It is not necessary to frighten the laity with too cold-blooded statements or too plain speaking in regard to the danger of sarcoma after trauma, because it is relatively rare. But if members of the profession will caution their patients to return to them for examination if the symptoms of the contusion do not quickly subside, or if there is any recurrence of pain and swelling, or any appearance of limp, loss of function or weakness, there will be an opportunity by careful palpation and *x*-rays to decide whether exploration is justifiable.

I would therefore look on the recognition of trauma as an etiologic factor in sarcoma of the soft parts, and of the bone, and the attempt to get such cases at an earlier period, as definite evidence of progress in the surgical treatment of malignant growths.

PRECANCEROUS LESIONS

The relation of a single trauma to cancer is less distinct and more remote than it is to sarcoma. But the more we investigate the previous condition of the skin and mucous membrane at the site of the carcinoma before the definite picture of carcinoma began, the more often do we find that this epithelial area has been the seat of some form of chronic irritation. Attention has been called to this so frequently in the literature for a number of years, that it is unnecessary to give any references. In the chairman's address before the Section on Surgery, at this meeting, Dr. Charles H. Mayo chose for his subject: "Prophylaxis of Cancer," and he took the opportunity to bring out the various precancerous lesions, and to advocate that when possible surgery should attack the lesion in that stage.

In my paper before the Section on Dermatology, I called attention to the fact that it has been my own experience, and in the publications of the accessible literature every author emphasizes the fact, that carcinoma of the skin of neck, body and extremities rarely begins except in a pre-existing tumor, ulcer, scar tissue, or some local form of chronic inflammation, for example senile, *x*-ray, and solar dermatitis, or the keratosis of lead and arsenic, psoriasis, syphilitic and tuberculous granuloma, etc. Surgery, therefore, has better and better opportunities to attack and cure the precancerous lesions, and I should look on this as recent progress in the surgical treatment.

DIAGNOSIS

Whether in the precancerous, or in the early or late malignant stage, proper treatment is absolutely impossible until a correct diagnosis has been made. Different pathologic processes can be cured by local operations of different magnitude. The same pathologic process requires operations of different magnitude, according to its situation in various tissues, organs or regions.

As surgical diagnosis must indicate that operation or treatment which will give the patient the best assurance of a permanent cure with the least mutilation, it is in this sense broader in its application than a pathologic diagnosis pure and simple. Surgeons have opportunities to study the clinical picture and to follow the ultimate results, and, for this reason, are in a better position than the pathologist to apply the pathologic diagnosis to prognosis and to methods of treatment. It appears to me very emphatically that surgical diagnosis, in this broader sense, should be the aim of the physician who operates for malignant disease.

My own studies of tumors, benign and malignant, have shown that the same tumor in various localizations may be eradicated by somewhat different procedures; while in one locality a carcinoma of a certain type may, from its onset, be hopeless on account of its position, in another the tumor is relatively benign, and surgery has accomplished cures by complete excision. For example, in the adenocarcinoma of the colloid type in the upper jaw, as with all the carcinomas involving the antrum, whether primary here or springing from the nose, the most complete eradication, in my own experience and in the literature, has up to the present time failed to accomplish a cure, while in the breast the same adenocarcinoma of the colloid type has been permanently cured with but few exceptions. The surgical diagnosis must therefore recognize the pathologic type of the lesion, and the individual who makes this diagnosis must be familiar with the proper operation for this pathologic lesion in this special locality.

CLINICAL DIAGNOSIS

When the correct interpretation of the pathology of the lesion can be made with sufficient certainty, without an exploratory incision, or without the aid of a frozen section, the term "clinical diagnosis" applies. This, of course, should be looked on as the highest art in surgery, and it should be the aim of all surgeons to educate themselves to become more and more proficient in clinical diagnosis. At the present time, however, a sufficiently positive diagnosis to justify a radical operation without the aid of the gross appearance or a frozen section is impossible in many instances. As a matter of fact, to-day we see more patients in whom a clinical diagnosis of a malignant tumor is impossible or uncertain, than we did ten years ago, and this is due to the fact that such lesions come to surgery at an earlier period.

It is true of malignant disease that, with but few exceptions, no matter where it is situated, clinical diagnosis becomes more difficult the earlier after the onset the lesion is first seen. It is also true of malignant disease, that the easier and more positive the clinical diagnosis, the worse the prognosis. Therefore, the stage at which the best results can be obtained is the one in which the clinical diagnosis is most difficult. Undoubtedly, a larger experience with tumors in this stage will educate surgeons in the ability to make even here a positive clinical diagnosis, but nevertheless it is a fact that to-day surgeons with the largest experience find themselves very frequently unable to make a sufficiently positive clinical diagnosis to allow them to proceed either with the restricted operation for the benign lesion, on the one hand, or the radical operation for the mal-

ignant lesion, on the other. They are of the opinion that justice is not done the patient, unless there is a positive diagnosis before the operation is completed. These exploratory incisions have been made for a period long enough to demonstrate that in such cases the results of treatment are much better than the results of the same treatment for the same disease at a later period in which exploratory incision is unnecessary for diagnosis.

OPERATIVE DIAGNOSIS

I employ this term for the diagnosis made at the operation, either from the gross appearance of the tissue exposed by the knife, or from a rapid frozen section. The method by which the surgeon gets at an exact interpretation of the pathologic process is immaterial in its relation to proper treatment, provided that method is one which will allow the diagnosis to be made at once and with sufficient accuracy for immediate action. Some surgeons have trained themselves to have confidence in their ability to make an exact diagnosis from the fresh appearance; others in addition wish to see a frozen section; some prefer to have a pathologist associated with the clinic to make the cellular diagnosis for them. Apparently it is the consensus of opinion that to cut into the tumor, excise a piece, or even to excise the whole tumor locally, then to close the wound, and wait a few days for a microscopic diagnosis based on a more careful technic of fixing and staining, does not offer the patient as good an assurance of a permanent cure as the method first described.

The ability to make a diagnosis clinically or at the operation, with or without frozen sections, is by no means to be considered sufficient. The surgeon must have kept himself abreast of the times by the careful study of his own cases and their ultimate results and by a study of the literature, so that he may be familiar with the extent of the operation which will give the patient the best assurance of a permanent cure with the least mutilation for the diagnosed pathologic lesion in its special situation.

I shall attempt to bring out practically this broad question of surgical diagnosis by considering lesions of special tissues, glands, organs, and regions.

BONE LESIONS

In the December numbers of *Progressive Medicine*, beginning with 1899 and continuing up to date, I have presented each year the literature and my own experience illustrating the points in treatment as based on correct surgical diagnosis, and have shown that the accumulated experience among surgical clinics which have carefully investigated their material, demonstrates, it seems to me, without question the correctness of the statements made in the introduction to this paper.

In both periosteal and medullary lesions it is frequently impossible to make a correct clinical diagnosis even with the aid of the *x*-ray. As amputation and even resection are operations which produce mutilation and disability, it is imperative for the surgeon, before proceeding with the performance of them, to establish an accurate diagnosis, and to perform these operations only for those lesions in which a permanent cure can be accomplished by these means alone.

At the recent meeting of the American Surgical Association in Washington, I presented a paper on "Bone Cysts, Giant-Cell Sarcoma and Bone Aneurisms." Rather than take space here, I would refer to that paper.

Table 1 gives the relative frequency of the benign and malignant bone tumors of which I have notes in the Surgical Pathological Laboratory. The majority of these patients were treated in the surgical clinic of Professor Halsted in the Johns Hopkins Hospital.

In the first place, it should be noted that among the 154 cases 60 were distinctly benign. With few exceptions the 34 cases of exostosis could be diagnosed clinically from the *x*-ray. Operative diagnosis was unnecessary and operation not indicated, except because of the size or discomfort of the growing exostosis. In small exostoses it may be difficult to differentiate the growth, even in the *x*-ray, from an ossifying periosteal sarcoma. Here exploratory incision should settle the question.

Now and then an exostosis is associated with the bursa, which may become the seat of inflammation and produce a rapidly growing tumor on account of the distention of the bursa with fluid (exostosis bursata). I have had one such observation in which everything in the clinical picture suggested a rapidly growing sarcoma situated in the muscles of the buttocks. The patient was an adult aged 30, and following a trauma there had been a rapidly growing tumor in this region. The veins and the skin over the tumor were dilated, the deeper tissues infiltrated; the tumor had somewhat the feeling of a cellular sarcoma covered with muscle. The *x*-ray showed no bone changes. (The exostosis did not show in the *x*-ray on account of its position; only an anteroposterior view was taken.) The exostosis grew posteriorly from the shaft opposite the great trochanter, and a lateral view to demonstrate its presence would have been a difficult task. The patient was sent to me prepared for hip-joint amputation, and, on account of the intense pain, loss of weight, and emaciation, it seemed justifiable to make such an attempt to give the patient some comfort for the few months he had to live. But following the rule that no such operation should be performed until a positive diagnosis was made, an exploratory incision was made into the tumor. Before reaching the tumor proper the edematous condition of the tissue suggested a sarcoma, but there was quickly exposed a definite capsule which consisted of a membrane 5 mm. in thickness. When this was divided blood-stained fluid escaped. The exploring finger found the exostosis, and the character of the lining membrane excluded a malignant growth. The operation consisted of chiseling the exostosis and the partial removal of the membrane. A complete removal would have been impossible without excising the sciatic nerve. A permanent cure has followed.

The bone cyst is a medullary lesion distinctly benign. Those who have had the largest experience are of the opinion that it cannot be differentiated in the *x*-ray or clinically from the giant-cell sarcoma or the bone aneurism. Such tumors should be explored. As the bone cyst contains a blood-stained fluid, it must be differentiated from the bone aneurism, because simple incision is sufficient for the bone cyst, while for the aneurism resection, or even amputation should be attempted to accomplish a cure. A bone aneurism is a term employed in the literature to describe a rare medullary tumor; there is a bone shell, a very narrow zone of tumor tissue of the round-and-spindle-cell type, and a central hematoma, due to hemorrhage into the originally solid tumor.

The periosteal and medullary giant-cell sarcoma is a very important bone lesion to recognize. This tumor grows rapidly and may break through its bone shell and involve muscle. Yet there have been cures by

local resection, even in this late stage. Many cases of medullary giant-cell sarcoma have been permanently eradicated by curetting. I have reported such a case in which the tumor involved at least one-third of the upper portion of the tibia. All of these cases are considered in the paper just referred to. The giant-cell sarcoma practically can be recognized only at the operation. If one is not familiar with the naked-eye appearance, its peculiar cellular structure can be easily appreciated in the frozen section. If this giant-cell tumor is a sarcoma, it is one in which recurrence after an attempt at a cure by curetting adds no risk to the patient. A number of cases are on record in which a permanent cure has been obtained after two or more operations. I have a patient who had been subjected to three unsuccessful operations for a giant-cell sarcoma of the lower end of the radius; he is now perfectly well, after the fourth conservative operation, and the hand has sufficient good function to allow him to work as a mechanic.

Among the less malignant bone tumors there is one of great interest—the periosteal osteosarcoma. This must be differentiated from the traumatic and syphilitic ossifying periostitis, and from the ossifying myositis. As a rule the diagnosis seems not difficult from the *x*-ray. But in a recent case, which I demonstrated before the American Orthopedic Association, during its visit to Baltimore in May, 1910, the difficulties and dangers of depending on the *x*-ray were well shown. An experienced Roentgenologist was of the opinion that it was an osteomyelitis with periosteal bone formation. A distinguished orthopedic surgeon was quite as positive that it was a syphilitic ossifying periostitis. The operation revealed a periosteal sarcoma surrounding the entire tibia, with periosteal bone formation.

Until very recent years the majority of American and English surgeons had been of the opinion that amputation should be performed as the routine operation for bone sarcoma, and in the past many limbs have been sacrificed for bone tumors, which were strictly benign (bone cysts), or which could have been cured by curetting or resection (giant-cell sarcoma), or for which resection was sufficient (periosteal osteosarcoma, myxochondrosarcoma, and fibrosarcoma). Apparently surgeons had been impressed with the great malignancy of bone tumors, and when now and then a cure was accomplished, even by amputation, they were surprised. If these cases had been studied pathologically it would have been seen that these cured patients suffered from tumors, which had been cured by other surgeons without amputation.

Now, as a matter of fact, the more malignant spindle-and-round-cell periosteal and medullary sarcoma kills by metastasis and rarely by local recurrence. If one is fortunate enough to get such a tumor when it can be removed by local resection, the probabilities of a permanent cure are just as good from this operation as from amputation. Theoretically, they should do better after resection, because such a tumor can be resected only in its early stage, and, as a matter of fact, in the literature, in spite of the small number of cases subjected to resection, this small group has at least an equal percentage of cures.

The experience, therefore, of to-day reverses the old rule: amputation is not indicated and should not be done for sarcoma of bone, unless the resection of the malignant disease would leave a limb without function. Now, if this malignant disease is a spindle or round-cell, periosteal or medullary sarcoma, grown to such dimensions as to require amputation, one cannot expect a permanent cure from an amputation at so late a stage; metastasis has most certainly taken place. These patients should not be subjected to the mutilation of an amputation for the few months they have to live, unless the tumor is giving so much pain or discomfort as to demand operation. On the other hand, if the tumor belongs to the less malignant type, amputation should be performed, because, in the majority of cases it will accomplish a cure. It was von Mikulicz who first took this position against amputation, and he came to this conclusion somewhat indirectly. He found that patients who suffered with bone tumors in their early stage, from which they had but little discomfort or loss of function, refused the amputation advised, but would consent to resection. Von Mikulicz and others then found that some of the most malignant bone tumors which were resected in their very early stage were permanently cured.

It was Koenig who first called attention to the comparative benignity of the giant-cell tumor, and since then the literature on this subject has gradually accumulated. And, as our experience grows, our faith in the conservative principle increases. It should not require courage to perform these conservative operations, but knowledge, which will allow an accurate diagnosis. As a matter of importance, it would be better to err on the side of conservatism. In the past, surgeons, in the majority of cases, have amputated when in doubt.

My own investigation of bone tumors has impressed on me the belief that diagnosis becomes most accurate when the surgeon has before him all the evidence—the clinical picture, the *x*-ray, and the fresh appearance of the tissue exposed at operation and the frozen section. I look on these, as stated before, as the elements of the surgical diagnosis. With this evidence the trained surgeon can act with assurance.

LESIONS OF THE FEMALE BREAST [2]

If 40 per cent. represents the usual proportion of cases of cancers of the breast, in which the patients remain well after a period of five years, and 80 per cent. the prognosis for the smaller group, in which the operation has been instituted relatively earlier, it seems fair to conclude that the prognosis will be better when laity and profession look on a mass in the breast as an acute disease, and subject it to examination by a properly trained surgeon within a few days of its discovery. When a breast lesion is malignant there should be no compromise in the operative removal. The mutilation by the most extensive dissection and the function of the arm are no worse than after a less radical procedure. The evidence at my disposal proves that, with the rarest exceptions, the prognosis for a relatively *incomplete* operation in an early case of cancer of the breast, when the diagnosis cannot be made from the clinical picture, is worse than after a *complete* operation at a later period.

In the study of the ultimate results after operations performed by Dr. Halsted and his associates, where the tendency, on the whole, is to perform a most radical operation, I have been surprised to find among the relatively few local recurrences, that the majority of them were observed after operations for the most favorable

2. In Kelly-Noble's Gynecology and Abdominal Surgery, 1908, ii, 180, I have contributed Chapter XXXI, based on a clinical and pathologic study of 1,048 cases.

type of tumor, and that the notes made at the operation recorded that the area of skin removed was less than usual and that the wound in some cases had been closed without skin-grafting. These facts illustrate that a favorable malignant tumor tends to influence even the most radical surgeon to a conservative position. This conscious or subconscious influence works with a subtlety most difficult to overcome. Especially for carcinoma in those regions where the experience of the surgical world has demonstrated that the best results are only obtained by the most radical, careful and painstaking dissection, it requires eternal vigilance, great enthusiasm and mental and physical strength of a high order to keep one's self at the tedious task. It is so easy to cut corners. There is a great temptation to save time. It is difficult to keep out of the mind the complete closure of the wound.

The time elapsing between the operation and the result in carcinoma has been in the past, and, I am sure, will continue to act in the future, as a negative force. Only those surgeons who keep the most thorough records of the relation between their operations and the results will find sufficient stimulus to still maintain enthusiastic advocacy of the most radical operation for carcinoma in certain localizations. Halsted's operation for cancer of the breast is an example of the method, and its author an example of this type of surgeon.

In the operation for cancer of the breast the skin incision and the subcutaneous dissection should be planned only to give the carcinoma the widest possible berth necessary. It should not for one moment consider the closure of the wound. Only after the operation for the malignant disease has been completed should this become the subject of the surgeon's concern, and there is no danger in such an attitude.

Fortunately for women, not all breast tumors are malignant, nor is the differential diagnosis at the exploratory incision a great obstacle. If the operator is trained to differentiate he will find that a large number of cystic and solid tumors can be recognized, differentiated from the malignant, completely removed, and the patients saved the mutilation of removal of the breast.

As is true elsewhere, so with regard to the breast, this education of the public will bring breast lesions earlier and earlier to surgeons for diagnosis at the operation. It will also be true that the surgeon's ability to diagnose cancer clinically at an earlier period will improve, and that exploratory incision will be required less and less frequently. It seems to be the consensus of opinion that the removal of only the tumor, to be followed a few days later by the complete operation if it prove to be cancer, does not give the patient the same chance for permanent cure as when the same radical procedure immediately follows the exploratory incision.

The benign lesion of the breast most difficult to differentiate at the exploratory incision and from frozen sections is the benign cyst, in the formation of which the breast is the seat of a peculiar epithelial activity most common at the menopause. This has received various names: abnormal involution, senile parenchymatous hypertrophy, chronic cystic mastitis, etc. As I have discussed this disease elsewhere,[2] it seems unnecessary to take space to do so here. But the ability to recognize this lesion, which is the most frequent benign tumor in the female breast during the cancer age, is of great importance. I would advise, however, that if there is any doubt in the operator's mind, the operation for cancer should be performed.

SYMPTOMS OF ONSET

In this paper on the recent progress in the surgical treatment of malignant growths, I cannot miss the opportunity to devote a few lines to the attitude towards symptoms of onset less frequent in breast lesions than tumor. Apparently the attitude towards tumor has been settled.

An ulcer of the nipple which appears spontaneously in a woman not nursing a child should to-day be looked on as sufficiently positive evidence of cancer (Paget's disease), to justify the radical operation. I have evidence to confirm this statement.

A discharge of blood from the nipple is not a sign of malignancy. If there is no palpable tumor in the breast, there is no danger from non-interference; if there is a tumor, it should be treated like any other breast tumor. The operator may be certain that he will find a cyst with a papilloma, and it will be his duty to distinguish the benign from the malignant.

Retraction of the nipple, or dimpling of the skin, is seldom observed, except when a cancerous nodule can be palpated. If, however, one comes across such a symptom before any tumor can be palpated, it should be looked upon as a sign of cancer.

The relation of *lactation hypertrophy and mastitis* to malignant disease is an important one. Studies of my own have shown that during the enlargement of the breast in a pregnant woman all lesions are very unusual. On account of this fact a mass which appears at this period should immediately be explored, because carcinoma infiltrates so rapidly. The prognosis after removal is distinctly worse than for the same tumor growing in the gland at rest. Now and then the benign fibro-epithelial tumor, which has not shown itself before pregnancy, appears after it. This is due to the fact that the tumor tissue takes on the same lactation hypertrophy as the normal breast tissue. Tuberculous mastitis may have its onset in the breast during pregnancy. I have observed carcinoma during pregnancy as often as the benign tumor or the tuberculous focus, and it is for this reason that I urge exploration for a positive diagnosis immediately after the first appearance of the mass. There is no mutilation and no injury to function after the removal of the fibroepithelial tumor, and it is also best to get at the tuberculous focus early. The breast may be saved, as the lesion is usually single. Of course, if a carcinoma is exposed the most radical procedure should follow. Apparently there is a prevailing impression among the profession that a lump in the breast during pregnancy is some form of mastitis, and for this reason such patients have been observed until the tuberculous mastitis ruptured or cancer becomes evident on account of infiltration of skin or retraction of the nipple.

After the birth of the child the most common lesion of the lactating breast is pyogenic mastitis. The portals of entrance are traumatic lesions of the nipple, caused by the nursing infant. Preventive measures of cleanliness, well understood by trained obstetricians and nurses, usually protect the woman from mastitis. This mastitis is rare after the fourth month. The evidence at my disposal teaches that a cake in the breast up to the fourth month of lactation can be considered, *a priori*, to be mastitis, but this mass should very quickly exhibit the signs of abscess and be treated by incision, or disappear. If this does not happen the suspicion that it is malignant should at once lead to exploration. I have observed

carcinoma as frequently as chronic lactation mastitis. In all of the cases of which I have a record, the lesion unfortunately has been treated as mastitis until the growth of the cancer has become manifest clinically. In this stage the prognosis from operation is practically hopeless. Fortunately obstetricians have found out that massage is bad for mastitis; it is distinctly worse—perhaps fatal—for cancer. A caked breast should receive only one treatment—Bier's hyperemia; in other respects there should be non-interference until the signs just mentioned indicate exploration.

Pain localized in a breast is not a sign of cancer if there is no tumor; it is not an indication for operation. When associated with tumor, it is more often suggestive of benignity than of malignancy. But, as the indication for the exploration of the tumor is distinct, whether pain be present or not, this symptom cannot be looked on as any aid in the clinical diagnosis. If it appears late after the tumor it is suggestive of carcinoma.

The chief reason for the removal of any *single tumor* of the breast immediately after it is first observed is to extirpate cancer at the earliest possible period. But there is another reason: it may be looked on as a preventive measure, locally and completely, to remove a benign tumor. Therefore, if a woman presents herself for the first time with a perfectly circumscribed and freely movable tumor of the breast, which has been present and quiescent for years, this clinical fact practically excludes malignancy. But such a tumor may at any time become malignant, and for this reason it should be removed. If the patient has multiple tumors in one or both breasts it is apparently wiser to remove at least one for a positive diagnosis. In the young woman the tumors are of the fibroepithelial type, usually the so-called intracanalicular myxoma, rarely the fibroadenoma. It is not necessary to remove the breast in order to eradicate the disease. There is no objection, however, to removing those tumors which are growing or causing pain, or to removing all of them if they are few in number, and if this can be accomplished without too much destruction of breast tissue. In a few instances the multiple tumor in the breast may be metastatic from the concealed sarcoma. The removal of one simply establishes early the fact of a hopeless disease.

In older women the multiple tumors are cysts associated with the epithelial disease, which I have mentioned. It has been my experience that cancer has so rarely been observed in such breasts that operation as a preventive measure need not be considered. In fact, my clinical and pathologic study of over one hundred such lesions gives rise to the conclusion that this disease produces immunity from cancer, and for this reason I am of the opinion that in the past we have been unnecessarily radical in our treatment of single or multiple simple cysts. The cysts can and should be removed. The parenchymatous lesion which has caused their formation has a strong tendency to spontaneous resolution.

The frequency with which large intracanalicular myxomas of the breast degenerate into sarcoma establishes a definite operative procedure for them which should never be omitted. When such a tumor has reached such a size that its removal practically amounts to the removal of the entire breast, it should be attacked as if it were sarcoma. That is, the tumor should be removed with the breast, the overlying skin and the underlying pectoralis fascia and muscle. In the first few cases which I studied in which the tumor was removed by enucleation as it seemed encapsulated, local recurrence in the pectoral muscle followed and proved fatal. In a larger number of cases observed since then, in which the rule established on the early experience was followed, there have been no recurrences.

Space forbids the consideration of the recent progress of the surgical treatment of malignant tumors in other regions. In these two papers I have covered considerable ground, more, I think, than sufficient to exemplify the principles of the broad question of surgical diagnosis which must always be the basis for surgical action.

In conclusion I would draw attention to the remark of Kocher in his most recent publication in which he discusses his twenty-five years' experience with cancer of the stomach. In the critical study of his cases he asked himself the question: What have those cases of cancer of the stomach in common in which the patients have remained well after gastrectomy? He found that all of them were freely movable tumors of the stomach wall, and with few exceptions situated at the pylorus; all of them were adenocarcinoma and many of these of the colloid type; there was but one scirrhus.

When the abdomen is opened and the surgeon palpates in the wall of the stomach a tumor, which is freely movable, gastrectomy should be performed. As a matter of fact this is the best treatment for ulcer and the only hope for cancer. If the mass, however, is adherent, and the surgeon is unable to decide whether it is cancer, resection is contraindicated, because posterior gastroenterostomy will give relief if it is ulcer, while adherent cancer will be practically hopeless. If the lesion is distinctly cancer, resection should, if possible, be attempted, because the patient, if he survives the operation, may be given months, or even a few years of comfort; in doubtful cases resection should not be employed, because an ulcer-patient ought not to be subjected to so great a risk.

CONCLUSIONS

Until we have found some other method of treatment for malignant growths, future progress must proceed along the lines which have developed up to the present time. There must be a correlation between the clinical, gross and microscopic pictures of the lesion in the same locality, and although the time which elapses between the operation and the result is remote, we must bring together ultimate result and operative procedure for lesions of the same kind and in the same locality. In every instance there must be a microscopic study. In this way surgeons will be able to make accurate surgical diagnosis, and, with the knowledge of the local growth and pathology of the lesion, they will be better fitted to plan and perform that procedure which will give the patient the best assurance of a permanent cure with the least mutilation. The surgeon will also understand how to give the greatest comfort to those unfortunates whose malignant disease has passed the period in which there is any hope of a permanent cure. In some the greatest comfort will come from non-interference, in others from palliative interventions.

These pitiable individuals with inoperable and incurable malignant tumors should not be left to the mercies of the quack with his various cancer cures. There is no doubt that the surgeon is able to do more for them and give them greater comfort than is any untrained individual, and there is the hope that, while the former is performing this eminently merciful duty, more opportunities will be offered for that research work

which may in time lead to the discovery of a cure other than operative removal alone.

We have by no means reached the limits of the early recognition and treatment of what might be called the precancerous lesions, nor in the early diagnosis of the malignant lesion itself. There is every evidence that surgery, which in the past has accomplished permanent cures of both cancer and sarcoma, can, along definite lines, increase very greatly the number of cures.

904 North Charles Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. LOEB, TYZZER, WEIL, MALLORY * AND BLOODGOOD, CONSTITUTING A SYMPOSIUM ON CANCER †

DR. LOUIS B. WILSON, Rochester, Minn.: Dr. Bloodgood has called attention to the importance of the surgeon's ability to diagnose cancers from their gross appearance at the operating table. Dr. Mallory has shown us beautiful pictures, illustrating the diagnosis of cancer by the microscopic examination of fixed tissues. There is between these two view-points an important connecting link, namely, the immediate microscopic examination of stained frozen sections of fresh tissue. Tumors in the stage for most successful operation are frequently of miscroscopic size and no amount of knowledge of gross pathology will help us in their diagnosis. Yet unless the diagnosis is accurately made microscopically while the initial operation is in progress, the patient is either needlessly mutilated, or, more frequently, suffers an incomplete removal of affected tissues with a resulting extension of the cancer. Some pathologists fail to get satisfactory results from sections of fresh tissues because the tissues are not really fresh; others use microtomes so crude that a good section is an accident; and yet others use single-tone stains which do not differentiate tissues; but most failures are from lack of experience with tissues properly prepared. In the scientific exhibit we have a number of autochrome photomicrographs of sections of fresh tissue stained with polychrome methylene blue, which no competent pathologist would hesitate to diagnose. In St. Mary's Hospital we have given a diagnosis from the microscopic examination of fresh frozen sections in 364 cases of doubtful mammary tumors alone. Subsequent examinations have revealed but one apparent error in this series. This accuracy has been due in part to the fact that in small doubtful mammary tumors the surgeons have invariably submitted to the pathologist the entire tumor with some surrounding tissue, but the diagnosis has invariably rested on the microscopic appearance. Frozen sections by no means give sufficient data for all diagnoses, but, if the data are within the tissues, properly stained, thin sections of really fresh material enable one to determine carcinoma as accurately as may be done from sections of the most elaborately prepared tissue.

DR. F. B. MALLORY, Boston: I would call Dr. Wilson's attention to the fact that in the Massachusetts General Hospital, diagnoses are and have for years been made from frozen sections. The same thing has been done in the Boston City Hospital for thirteen years. It is a common procedure everywhere, so far as I know.

DR. H. GIDEON WELLS, Chicago: Within the last few months I have made some observations regarding the enzymes of cancer, which I wish to place on record at this time. One of the characteristic features of malignant tumors is the persistency of the histologic structure; so if a tumor is primary in one structure and secondary in other organs, it maintains the same histologic structure in all. Few attempts have been made to ascertain whether in their chemical constitution and biologic behavior these tumors also maintain a consistent condition, and fail to partake of the nature of the second organ in which they have formed metastases. It is possible that a primary tumor might retain its original structure as a secondary tumor, but might acquire chemical or biologic characteristics from that second tissue. I have, consequently, attempted to learn whether we can determine whether the enzymes are different in primary and in secondary tumors. As the best way to learn this with some degree of accuracy, I have selected secondary tumors in the liver, because in that organ we have an enzyme that will oxidize xanthin into uric acid, and this enzyme is not present in any other tissue in the body. A number of experiments have shown that when primary tumors occur in various parts of the body and produce secondary growths in the liver, the secondary growths do not acquire this power of converting xanthin into uric acid.

DR. LOUIS B. WILSON, Rochester, Minn.: I do not wish to claim priority for the frozen-section method, though I published four years ago what has proved to be a useful modification of the technic. But I do wish to urge the importance of the routine examination of contrast-stained, thin sections of perfectly fresh material, as a means of increasing our skill in the rapid microscopic diagnosis of tumors to guide the surgeon during the progress of a patient's first operation. Many pathologists have abandoned the procedure from lack of material, bad technic or insufficient experience, but it too frequently has a vital relationship to the patient's welfare to excuse our failure to perfect ourselves in its use.

* Dr. Mallory's article is the leading one in this issue.

† Another symposium on cancer will be printed next week, the one presented in the Section on Dermatology at the St. Louis Session.

CARDIOSPASM WITH DILATATION OF THE ESOPHAGUS *

REPORT OF TEN CASES

JESSE S. MYER, A.B., M.D.

Lecturer on Clinical Diagnosis, Medical Department of Washington University

ST. LOUIS

Although the symptom-complex of cardiospasm has been known to the medical world under a variety of names for several decades, but few authentic cases found their way into the literature prior to the last decade. As early as 1821, in fact, the condition had been observed by Purton, and trauma considered by him as a causative factor. Esophagus spasm, however, had been known to medicine even long before this, and it is not at all unlikely that some of the early reports, which go back to 1740, even as far back as Hippocrates, were certain stages of the condition known to-day as cardiospasm.

In 1878 Zenker and Von Ziemssen had collected reports of seventeen cases under the title of "simple ectasia," and stated that in these cases there was enormous ectasia of the tube without any underlying stenosis. The reports of cases collected by them were those of Purton (1821), Hannay (1833), Rokitansky (1840), Delle Chiage (1840), Abercrombie (1843), Oppolzer, Spengler (1853), Wilkes (1859), Giesse (1860), Ogle (1866), Luschka (1868), Klebs, Davy (1875), Stern (1876), Dave (1877).

Hamburger in 1871 presented a very lucid description of spastic stenosis of the esophagus with mention of two cases in which, however, there was nothing said of an accompanying dilatation. He described the condition as "stenosis spastica fixa" in contradistinction to "stenosis spastica migrans or intermittens." He understood by the former "the cramp-like contraction of the circular fibers of a small area of the esophagus, which never varies from this position, not occurring paroxysmally, but which remains at one and the same place for weeks and months." According to the present acceptation of

* Read before the American Gastro-Enterological Association, St. Louis, Mo., June 6-10, 1910.

the subject this would seem to answer a description of cardiospasm in which dilatation had not yet occurred, or was unrecognized.

Since the reports of these earlier cases isolated examples had been recorded up to 1900 by such observers as Strümpel, Mikulicz, Meltzer, Leichtenstern, Maybaum, Reitzenstein, Russell, Rosenheim, Westphalen, Fleiner, Boas, Netter, Strauss and others. At this time Newman was able to find but 70 cases reported in the literature, and even as late as 1904 Mikulicz estimated that reports of a hundred cases could be collected. In the last decade, but more especially in the last five years, the cases have rapidly multiplied, doubtless to twice this number. In this country Erdman, Sippy, Einhorn, Plummer and others have made valuable contributions to the literature. Plummer alone reported forty cases, all of which had come under his own observation, and three-fourths of them in the last four years.

In my own experience nine of ten cases have come under my observation in the last three years. It is quite probable, however, that because of a lack of intimate knowledge of the symptom-complex prior to this time, such cases may have escaped unrecognized. In 1905, for instance, Ibrahim made a most exhaustive study of congenital pylorospasm, reporting 113 cases; of this number no more than ten or twelve were found in American literature. In the past five years this phenomenon in infants has become so frequently recognized as no longer to call for the recording of isolated cases. The same must apply to the condition here under discussion, and the probabilities are that with the wider dissemination of knowledge of this affection it will be much more frequently encountered.

It has been variously described heretofore under the titles "simple ectasia," "spindle-shaped dilatation of the esophagus without anatomic stenosis," "congenital dilatation of the esophagus," "idiopathic dilatation of the esophagus," "spasmogenic diffuse esophagus dilatation," "paralytic dilatation of the esophagus," "cardiospasm with secondary dilatation," etc. While there is still slight confusion as to the name to be applied, the general tendency is to accept the last term to cover all of the cases heretofore described under these various titles.

There has been throughout a remarkable unanimity of opinion as to symptomatology and treatment of the condition, but a vast amount of discussion as to the pathogenesis, and the question of priority of the spasm and the dilatation. Though Strümpel and Mikulicz as early as 1881 had recognized the etiologic significance of spasm in diffuse dilatation of the esophagus, to Meltzer belongs the credit of recognizing its true importance in this connection. He was the first to look on dilatation in these cases as a stagnation ectasia, due to the abnormally contracted cardia, which he attributed to a disturbance in the nervous mechanism controlling the cardia. He based this belief on theories that he had evolved and observation that he had previously made on the physiology of the esophagus. Rosenheim took exception to this theory, maintaining that the dilatation was primary and the cardiospasm secondary, pointing to the fact that in anatomic stenosis of the esophagus as, for instance, in carcinoma, or benign scar formation, sacculation rarely develops. He has been a firm adherer to this belief and still maintains that there is an idiopathic dilatation of the esophagus. Strauss believed that the spasm and dilatation occurred simultaneously, and were due to the same cause, namely, vagus paralysis. In this way he explained the simultaneous occurrence of the two conditions. Fleiner explained the dilatation on a congenital basis, believing that it existed from birth, and even went so far as to maintain that a congenital dilatation might remain latent for years. Acceptation of this belief has resulted in the reports of cases of so-called congenital dilatation of the esophagus in which the first symptoms occurred even late in life.

My experience in a series of ten cases leads me to the belief that there *is* a congenital basis for the development of the sacculation, but not according to Fleiner's acceptation of the subject. Though this experience has been limited—too limited perhaps, to justify definite conclusions—I have been greatly impressed in my cases with the relationship existing between this phenomenon and the enteroptotic type of individual. Glénard, Stiller and their followers have shown beyond a doubt that there exists a type of individual, presenting certain well-defined outward evidences, which indicate a congenital tendency to a general asthenic state—asthenia universalis congenita. They are characterized by a slender gracile build, long, flat thorax, acute costal angle, floating tenth ribs, pulsating aorta, splanchnoptosis, etc. In these individuals not only are the viscera in a state of ptosis, but the hollow viscera especially are atonic, manifesting at the same time, paradoxical though it may seem, a tendency to spasticity as well. This is shown in the *corde colique transverse* of Glénard and the spastic cecum and sigmoid so often encountered in these cases.

That cardiospasm is of nervous origin seems to be the general consensus of opinion. How or why it develops in certain persons has, however, never been satisfactorily explained in spite of the splendid work on the physiology and pathology of the esophagus by such distinguished investigators as Sinnhueber, Meltzer, Mikulicz, Rumpel, etc. Many etiologic factors have been considered in previous case reports, but in none, with the possible exception of trauma, has any direct connection been determined. For the development of cardiospasm, as for certain other conditions dependent on nervous causes, there are probably necessary two factors, a predisposition and an irritant. Assuming, therefore, cardiospasm to be a disturbance of innervation, we may expect it most often in individuals with neuropathic tendencies. With the onset of the spasm at the cardia, dilatation of the esophagus could readily be explained, if the congenital tendency to atony which is known to exist in the hollow viscera of the abdomen also is present in the esophagus.

It would not be justifiable for me to assume, simply because of my observation in a limited number of cases, that a majority of cases of cardiospasm with dilatation occur in persons with universal congenital asthenia. The relationship was so striking in my experience, however, that I felt constrained to look on cardiospasm as the expression of an exciting cause, be it trauma or what you will, in that type of individual in whom almost every shock to the nervous system gains expression in some local or general manifestation.

The symptomatology is brought out in the case reports which are appended and will need no repetition here. The same is true of the final results of the treatment in each case. It will be seen that while the ultimate results have not been so uniformly satisfactory as those described by others, on the whole the results have been good. If these cases are carefully followed after stretching of the cardia, I question very much if any of the patients in whom sacculation had occurred will be found

to be entirely free from symptoms at any time. My experience has been that they will always have to exert more or less care in the amount and character of food taken and the manner of ingesting it. In other words, I doubt if complete relief is possible after sacculation of the esophagus exists.

Therefore, the earlier a case can be recognized the more complete will be the cure, for when sac formation has occurred irreparable damage has been done. While the patient's life may be practically saved and the individual made reasonably comfortable, he can never be restored to a perfectly normal state. These patients are, however, so grateful for the relief given that they always report in optimistic terms, and are apt, therefore, to mislead even the physician. This in all probability is responsible for some of the assertions that absolute cure has been obtained.

The dilator which I have used in the stretching of the cardia is practically the same as heretofore described by Russell, Strauss, Plummer and others, consisting of the double rubber bag with a silk bag inserted between, attached to the ordinary stomach-tube, having no opening in the end. Having had considerable difficulty with the rubber bags obtained from the manufacturer, I have found it expedient to make my own dilators through the employment of what is known to surgeons as the Penrose drainage tubing. This is made of rubber dam and can be obtained in yard lengths of varying diameters, so that the dilator may be varied in size according to the caliber of the rubber dam tubing and the silk bag. This tubing has the advantage of being very durable and at the same time very inexpensive. The outer bag is removed after each operation and discarded. The introduction of the dilator is facilitated by the use of a steel spiral as a mandarin. This can be easily removed after the dilator is in position. The location of the spasm is carefully determined through the use of a sound and a mark made at such a point on the dilator tube as to indicate when the stricture is at about the middle point of the dilating bag. I have not found the thread method of Plummer necessary, nor would it have aided me especially, except in one case. I have rarely failed in the introduction of the dilator when it was preceded by the use of the esophageal bougies varying from 24 to 36 F. In dilating the stricture a large glass syringe is used, such as is employed in the irrigation of the bladder. With this the exact amount of fluid can be carefully measured and pressure exerted gradually. I have not found a manometer necessary or helpful, because after all, one must depend on pain and the patient's ability to endure it, as an indicator. This is the best indicator of the degree of pressure to be used, and after the first two or three divulsions one can determine very readily the degree of pressure to be used in the individual case. This will vary greatly; therefore a manometer reading would not be especially significant. Having previously noted the amount of water that it will require to dilate the bag to its fullest extent, one can tell pretty exactly to what extent the bag is inflated by the reading on the piston of the syringe. It has been my plan to stretch the cardia biweekly during the first two or three weeks, then each week until the symptoms of spasm have been entirely relieved.

For determining the capacity of the sacculated esophagus, a small rubber dam bag, sealed to the end of a stomach-tube, was introduced and gradually filled with water under pressure, until the patient complained of a marked sense of pressure. The quantity of water required gives the approximate capacity of the sac.

Often when using the soft tube in these cases to obtain stomach contents, one will be in doubt as to whether the tube has passed through the stenosis into the stomach, or is, perhaps, rolled up in the sac. This can be readily determined by having the patient take a deep breath while holding the distal end of the tube in a glass of water. There being a negative pressure in the esophagus on deep inspiration, water will be drawn into the tube if the other end is in the esophagus pouch, while the opposite will be the case if the tube has entered the stomach. This test also aids in the diagnosis of sacculation, for if such be present more water will be drawn up into the tube than in the normal esophagus. In the cases here reported there were seven males and three females, averaging 37 years of age, eight whites and two negroes. Two gave histories of injuries, one (Case 7) shortly before the development of the cardiospasm and one (Case 1) thirteen years before; one (Case 2) occurred shortly after childbirth; in one (Case 5) there was an indefinite history of lues, but not until after the development of epigastric symptoms; in one (Case 8) a history of pneumonia with pleurisy fifteen years before. In five there was nothing in the history which could have been considered of the slightest etiologic import. Superacidity of the gastric contents which has been mentioned as an etiologic factor, was present in but one of my cases; a marked subacidity existed in three cases; and the rest were within normal limits. Nine of these persons were definitely enteroptotic, exhibiting the various stigmata.

Four patients declined the necessary treatments for relief. Two of these (Cases 1 and 6) have since died of inanition; the other two (Cases 2 and 3) it is hoped will submit to the stretching of the cardia later. In four of the six patients who have submitted to treatment (Cases 4, 8, 9 and 10) the results have been highly satisfactory. Comparatively speaking, they are well, but strictly speaking there remains evidence of the sacculation many months after the treatments have been discontinued. They must eat slowly, chew their food thoroughly, avoid drinking cold water, and two patients (Cases 4 and 5) must, through a slight regurgitant effort, empty the pouch of the fluid collecting there occasionally. It is questionable whether the dilated sac is ever entirely empty, for the negative pressure in the sac is probably always sufficient to retain a small column of fluid there, whether it be saliva swallowed, mucus secreted or fluid ingested.

Two patients have been only partially relieved. In one of these (Case 7) the spasm was entirely overcome and deglutition made possible, but an ulcer at the cardia causes most intense pain with every act of deglutition. The ulcer evidently existed prior to the stretching of the cardia, but was unquestionably rendered worse thereby. This patient has recently returned to the hospital with a very small irregular mass on the anterior wall of the stomach near the cardia, either of an inflammatory nature, or an early malignancy. Patient 5 has been greatly benefited, but the treatment has had to be continued from time to time during the past year on account of relapses, in spite of the fact that each time the procedure has been carried to what we consider the rational limit, viz., 4.5 cm. Mikulicz hesitated to employ this method, because he was unwilling to carry out a procedure that he could not control by vision. Though developments have shown that he was not justified in this position, it behooves the operator to use the utmost care.

It is interesting to note that cough was a persistent symptom in Case 4, and was greatly aggravated in the recumbent posture, evidently owing to vagus irritation, as in a case reported by Westphalen. In Cases 4 and 5 water would flow into the mouth during the night if the patient assumed certain positions and would often cause strangulation. The patient often awoke to find his pillow saturated with the fluid that had gravitated into the mouth from the sac.

It was striking to note the regularity with which the patients reported that inability to swallow cold water was one of the earliest symptoms, and we may add, one of the most persistent ones, the cold directly or indirectly stimulating the contraction of the circular fibers at the cardia.

In the various tests to which the esophageal contents has been subjected to differentiate it from the gastric contents, I have seen no mention of sugar. In the former sugar is present in much larger amounts than in the latter, owing to the fact that in sacculation of the esophagus the conditions are ideal for sugar production, namely, stagnation, warmth, the salivary ferment and carbohydrates. For similar reasons (viz., stagnation, sugar, warmth and bacterial flora) lactic acid is present in considerable amount. Case 10 is reported here as presenting a possible congenital dilatation of the esophagus and cardiospasm, because of similar reports which have been handed down in the literature under this name. Certainly if the term "congenital" is ever justifiable in connection with dilatation of the esophagus it would be here. My impression, however, is that we have here to deal with a case of congenital, partial stenosis or atresia of the cardia, with secondary dilatation of the esophagus, in a child with the enteroptotic habitus, rather than cardiospasm.

Judging by a review of the literature there seems to me insufficient justification for ever considering dilatation of the esophagus congenital and primary. It is more likely that in all of these cases there were congenital obstructions, following which dilatation developed. In some of the cases that have been reported in the literature as congenital dilatation there were no symptoms manifested until the patient had attained an advanced age. This seems most illogical.

Case 11, while not strictly belonging to the class of cases here under discussion, may be included in such a report with perfect propriety. This was considered a case of cardiospasm with dilatation of the esophagus, the patient was so treated, and only after an effort to relieve the condition through laparotomy was the true nature of the obstruction revealed. There was found to exist an infiltrating scirrhous carcinoma, involving the entire fundus of the stomach, which had contracted down to the size of a hen's egg. The symptoms in this case had existed for several years. Though it is possible for a growth of this type to have existed for this length of time, it nevertheless seems possible that malignancy developed following or as a result of cardiospasm. I wish to make no definite claim, however, and report the case chiefly to show how one may fall into error in the matter of diagnosis.

REPORTS OF CASES

CASE 1.—*Patient.*—S. R., a man aged 50, with negative family history, thirteen years before seen, January, 1907, had fallen from a wagon, injuring his neck. This accident was followed by partial paralysis of the right side of body, which gradually cleared up. The right leg would tire easily and "went to sleep" often. The present trouble began about the middle of 1905 with difficulty in swallowing, and stabbing pains in the region of the liver during deglutition, under the lower part of the sternum. In the beginning the patient was unable to swallow meat, which often lodged and was eructated; he could drink fluids more easily, but found coffee and other fluids harder to swallow than water. At this time he was observed at the Jewish Dispensary, but no obstruction could be made out by the physician in charge. The gastric secretions and motility were normal. A few months later he was observed by another physician, who also found that large sounds and tubes entered the stomach without difficulty. In January, 1907, a small bougie met obstruction at the cardia, and at this time he came under my observation.

Examination.—Since the beginning of trouble patient had lost 15 pounds. The esophagoscope was introduced and the obstruction could be easily detected, there having developed as yet no marked degree of dilation of the esophagus. There was at the cardia an annular stenosis, rather white and glistening, showing no irregularities and not bleeding on manipulation.

Course of Disease.—The patient was under observation only a short time, during which I was unable to introduce the cardiodilator, though succeeding with the larger sounds. Unfortunately he passed from observation before we had succeeded in dilating the obstruction. He died about a year later, of inanition.

CASE 2.—*Patient.*—Mrs. B., aged 31, was observed March, 1907. Her present trouble had begun shortly after the birth of her child seven years previously with sharp pains in pit of stomach, belching and sour eructations. The pains disappeared, but there persisted a fulness, as if a "lump lay there"; the food seemed to lodge above the stomach and could be forced down only by taking a few swallows of water. The patient at the time of observation eructated gas after eating and could "spit up food at any time." She tried to eat little and often; otherwise the food would not pass down. She experienced shortness of breath after eating.

Examination.—The patient was a small, emaciated woman of typical enteroptotic type, with acute costal angle, 30 degrees, floating tenth ribs, marked degree of gastroptosis, the lesser curvature being on a level with the umbilicus, and long slender thorax. On the introduction of the stomach-tube into the esophagus 4 to 8 ounces of liquid containing large particles of meat, bread and undigested food were obtained, slightly acid in reaction, containing lactic acid decidedly positive, sugar in considerable quantity, much viscid saliva and no free hydrochloric acid. At the cardia an obstruction was met but was easily overcome, and from the stomach 2½ ounces of well-digested contents were obtained; free hydrochloric acid 12, total acidity 33. If fluids of different color such as carmin and methylene blue were introduced, one into the stomach and the other into the dilated esophagus, after an hour's time the two solutions could be obtained separately. An *x*-ray plate of the thorax following the ingestion of a quantity of bismuth pap showed the presence of a very large spindle-shaped dilatation, involving more than one-third of the lower esophagus.

Course of Disease.—The patient passed from observation for a time, returning in February, 1908. In the meantime a cardiodilator of the Russell type had been obtained and was employed but once. The patient objected to the distress caused by use of the dilator and passed from my observation.

CASE 3.—*Patient.*—H. W., aged 44, seen April, 1907, had had migraine since childhood; there was no venereal taint, no history of trauma. Six years before he had had pneumonia with pleurisy. When 24 years old, while eating a sandwich consisting of bread and sardines the patient had a sudden severe attack of pain lasting for several hours, just at the end of the sternum. He had the impression at the time that a small bone had lodged there. Ever since had had difficulty in swallowing on account of an obstruction in lower part of esophagus; he was compelled to eat very slowly, chew food thoroughly and at frequent intervals during the meal to wash it down with a glass of water. He would eat enough solid food "to fill up the esophagus" and then drink enough water to force it through into the stomach. For many years he had taken but two meals a day, "because it was too much

trouble to eat." He had not enjoyed a meal in twenty years and "ate only to live." At certain times solid food would pass through better than at others; at other times even water passed through with considerable difficulty. In the beginning the patient often eructated his food, but after he learned how to eat, this rarely occurred. Through a thorough understanding of his case the patient succeeded in keeping himself in a very excellent state of nutrition.

Examination.—The physical examination was practically negative; the patient was not of the enteroptotic type. The soft tube met an obstruction at the cardia, which was easily overcome with bougies of varying sizes. The sac contained at all times a small quantity of fluid, but no macroscopic food particles. The stomach contents showed marked reduction in acidity; free hydrochloric acid 10 to 12; total acidity, 20 to 24.

The patient manages his case so well that he has thus far declined stretching of the cardia.

Case 4.—*Patient.*—E. G., aged 46, seen October, 1908, denied lues; had suffered no trauma. Present trouble dated back three years, to a time when the patient began suffering from occasional burning pains in the epigastrium after eating. These would be relieved by taking a drink of water. There was pain occasionally when the stomach was empty and more or less indigestion, characterized by belching, for a year. During the past six months the patient had had difficulty in swallowing and at times had to leave the table to bring up food which would not pass down. He had a cough at night, which would continue for several hours, until he had brought up several ounces of liquid. This would not occur again during the remainder of the night and never during the day. When he lay on right side his pillow would be wet in the morning as if the saliva had been drooling all night. If he took a glass of cold water during a meal he was unable to get anything else down after that and would have to leave the table to vomit. He had been treated for various forms of stomach trouble, but rapidly lost weight, became weak and incapacitated for work and was now compelled to spend most of time reclining.

Examination.—The patient was 6 feet 2 inches tall, with long slender thorax, moderately acute costal angle, floating tenth ribs, relaxed abdomen and pulsating epigastric aorta. The introduction of the tube into the esophagus removed a quantity of undigested food, five hours after eating, slightly acid in reaction, lactic acid positive, no free mineral acid, rich in sugar. The respiratory test was decidedly positive. The stomach-tube encountered an obstruction 49 cm. from the teeth, which could easily be overcome. The tube could then be passed into the stomach and normal stomach contents removed. The free hydrochloric acid was 56 to 70; total acidity 87 to 92 in repeated examinations. The sac easily contained from 3 to 5 ounces. If a methylene blue solution were poured into the stomach, the tube then withdrawn into the esophagus and carmin solution poured into the sac, a half hour later these two solutions could be obtained separately. The *x*-ray, after the ingestion of a bismuth pap, showed marked dilatation of the lower third of the esophagus.

Course of Disease.—From October 2 to 18 the cardiodilator was used every day or two. Amount removed from the esophagus at the beginning of each examination diminished from 5 to 2 ounces, at first containing food remnants of all kinds with lactic acid, etc., and later consisting of nothing but watery fluid, with no food remnants at all and no lactic acid. The patient gained in weight from 138 to 148 pounds. His difficulty in swallowing is relieved and he returned to work.

May 28, 1910: Treatment was discontinued year and half ago, since which time the patient has been at work without the loss of a day. Toward latter part of meal he still feels a sensation of pressure under end of sternum, which is relieved by several swallows of water. He empties the sac every night by leaning over with his head low and forcing the fluid out; there are rarely any food particles, unless it be something like cracker, which floats on water. If the sac is not emptied before retiring he is apt to awake with a slight cough due to the fluid trickling into larynx and is then compelled to empty the sac. His weight is 160. He finds that cold water is practically the only substance which does not go down freely. He has no difficulty with other fluids. He regurgitates no food and has no pain.

Case 5.—*Patient.*—C. D., aged 30, seen February, 1909, had a doubtful primary lesion six months before coming under observation; no history of injury. Present trouble began about two years before observation when the patient noticed that "food seemed to stop above the stomach and gradually pass down." He was compelled to masticate his food well and eat slowly. Cold water met the same obstruction, but hot water always passed without difficulty. The condition grew worse, so that most of the food "clogged up" just above the stomach, and would have to come up. By getting up from the table and moving about the patient could often make the food pass into the stomach, and he then would have relief. He became accustomed to getting up three and four times during every meal. After a time even this failed to give relief, and most of his food had to be regurgitated. He would often have pain in his chest, severe, cramp-like in character, but not lasting long; had often brought up food taken twelve hours before. Sometimes at night while asleep he awoke coughing and almost strangling from the esophageal contents gravitating into his throat. He learned that soft food taken warm would pass with least difficulty. He then gained some weight and strength, but any change from this rigid diet caused trouble.

Examination.—The patient was poorly nourished, of medium height and enteroptotic habitus. He had acne vulgaris, acute costal angle, floating tenth ribs and succussion over stomach. Introduction of the stomach-tube into the esophagus removed a quantity of undigested food, slightly acid, rich in lactic acid and sugar and much viscid saliva. At the cardia an obstruction was met which at first could only be passed with the smallest bougie. After gradual dilatation with bougies the cardiodilator could be introduced and inflated. The respiratory test was positive. The esophagoscope revealed a dilated pouch just above the cardia with food remnants and mucus clinging to the mucosa, which was thrown into vertical folds. The point of constriction itself could not be seen, because of the thick, tenacious saliva which collected at the bottom of the sac, and could not be removed completely.

Course of Disease.—The stenosis was stretched at intervals of three to four days. Patient was instructed to empty the sac after each meal and at night, so that no stagnant food should remain.

May 27, 1910: The patient has now been under observation for over a year and the cardia-dilatation carried out at intervals of a month or more since. The difficulty which he now experiences is such as one might expect from a sac without tone. He cannot take solids easily and cold water will not pass through. Semisolids and mushy foods pass readily, while the more solid foods require water, soup, or some other liquid to carry them down. The patient does not spit up his food at all and whatever he eats finds its way eventually into the stomach, but with considerable distress. He has gained weight and in general is greatly relieved.

Case 6.—*Patient.*—Mrs. H. C., aged 40, was seen April, 1909; her father died of apoplexy; she had three children, and two years before the time of observation had rheumatism. The first symptoms of the present disturbance began about five years before the time of observation with pain in the epigastrium, occurring chiefly at night, once or twice a week. It was usually promptly relieved by swallowing water. Occasionally pains occurred soon after eating. There was no vomiting at any time. Shortly after the inception of the pain the patient began to have difficulty in swallowing, "the food simply refusing to go down." A drink of water would sometimes help. This difficulty persisted more or less ever afterward. The patient was able to get small amounts of food down through great persistence. She was treated at the Washington University Clinic for several years by means of bougies, and thus kept alive. There was a slight obstruction at the cardia, but a moment's pause without much manipulation would remove the difficulty and the tube

would enter the stomach easily, without pain or marked discomfort.

Examination.—The patient was greatly emaciated and her lips were slightly cyanotic. Aside from a slow heart-beat, examination of chest was practically negative. The abdominal wall was very thin; there was slight separation of the recti, movable right kidney, palpable, pulsating aorta, vertical stomach, gastroptosis. The gastric analysis showed free hydrochloric acid, no lactic acid. I am indebted to Dr. Fischel for the opportunity of observing this case, and of stretching the cardia on a single occasion.

The patient did not submit to further treatments, and has, I have learned since, died purely of inanition.

CASE 7.—*Patient.*—D. E., aged 47, seen June, 1909, denied luetic infection. Past history was unimportant with exception of an accident in December, 1906, when the patient was knocked down by the tongue of a wagon, one wheel passing across his chest. He was confined to bed for three weeks. The present trouble made its appearance shortly after this, at first in an inability to swallow solids easily. This condition gradually grew worse and the patient was compelled to take one or two glasses of water to wash the food down. He finally regurgitated both solids and fluids, being able at times to retain warm liquids only; did not vomit or belch, but "spat up food." He consulted a number of physicians and submitted to various forms of treatment without benefit. Two weeks prior to my first observation he began having burning pains in the epigastrium when bougies were passed, and even when he ate or drank. The pains were behind the lower part of the sternum, were greatly aggravated by efforts to swallow and often awakened him at night. In the beginning they were relieved somewhat by the application of hot packs, rest, alkalies, etc., but at the time he was seen by me nothing gave relief.

Examination.—This revealed a weak, emaciated individual, whose facial expression gave evidences of great suffering. The bougie met a resistance at the cardia, which was only momentary, the sound slipping into the stomach. The passage of the bougies caused the patient to complain bitterly of pain, which persisted even after the removal of the sound. The diagnosis was cardiospasm with dilatation of the esophagus and peptic ulcer, either the cause of the spasm, or the result of constant manipulation.

Course of Disease.—It was thought wise to use the cardiodilator to relieve stenosis as well as the irritation, as in dilatation of the sphincter ani to relieve fissures of the anus. The large dilator was inflated to its utmost, namely 3 cm. diameter causing intense pains and returning streaked with blood. Several dilatations were carried out from which the patient obtained great relief, so far as the obstruction was concerned, but the pain was only increased thereby. He gained weight and improved in a general way through the increased nutrition. The pains could be temporarily relieved with orthoform.

June 1, 1910: No obstruction to the passage of food, but the pain still persists. A small, irregular, flat mass is palpable on the anterior wall of the stomach on deep inspiration, and is evidently near the cardia. It is impossible to say at this time whether this is an inflammatory mass extending from the cardia, or whether it is a beginning malignancy.

CASE 8.—*Patient.*—Mrs. A. M., aged 43, seen November, 1908, fifteen years previously had pulmonary disturbance which was interpreted by her physician as gangrene of the right lower lobe; was confined to her bed for thirteen weeks with fever, expectoration, etc. The pain in the right side continued to exist for many months. There was no history of either lues or trauma. Two years before the time of observation the patient began having difficulty in swallowing and distress under the sternum after eating. Food would apparently "stop halfway" and cause great discomfort until it passed into the stomach. Shortly after this the patient was unable to take cold water, which would be immediately regurgitated. She lost weight and strength rapidly, and was under treatment for a year without benefit. Periods of from one to three days would pass during which she was unable to get a single morsel through the cardia. This condition was finally relieved by the passage of sounds by her physicians. After this if food did not pass through the cardia promptly she would invariably have to bring it up. The stricture would seem to be spontaneously relieved, when the swallowing was better for a time. It had gradually become worse until November, 1908, when the patient was taking nothing but small quantities of mushy foods and warm fluids.

Examination.—There was slight, harsh, vesicular breathing at the apex of the left lung; otherwise normal thoracic conditions. There were no abnormal physical signs over the region of the right lower lobe. The patient was still fairly well nourished, though 20 pounds below her usual weight. The stomach-tube, passed readily to a point 39 cm. from the teeth, met a slight obstruction which was easily overcome. The same was true of the large bougies. There flowed from the esophagus sac 3 or 4 ounces of fluid containing food particles. The stomach contents showed free hydrochloric acid 43; total acidity 66. The esophagoscope was introduced without difficulty to a point 10 inches from the teeth where the esophagus seemed to bend slightly to the right and backward so that the lumen could not be seen ahead. The lumen of the esophagus at this point, however, was not especially encroached on; the esophagus seemed rather to be pulled to one side by an old periesophageal inflammation. Beyond this point was a dilated sac extending down to the cardia. The cardiodilator was introduced with some difficulty.

Course of Disease.—The dilatations were carried out first twice a week, then once a week, finally once every two or three weeks for a period of about six months, the large dilator, 3 cm. in diameter, being used.

May 31, 1910: Almost a year has elapsed since the treatment of this patient was discontinued. She reports that she has been able to eat a general diet with comparative satisfaction. From time to time she has a little discomfort and must at all times exert great care in the manner of eating. She can never take anything very cold without its being regurgitated; otherwise she never regurgitates her food. There are times even now when the food seems to lodge for a moment and then pass through. Her weight has remained fairly constant. She eats heartily, but has learned to devote twice as much time to her meals as she did formerly. She finds that she should not drink anything while eating, but takes fluid after meals. The sac now holds 180 c.c. of fluid.

CASE 9.—*Patient.*—C., seen June 7, 1909, had had no injury and denied lues. Present trouble commenced a year previously with disturbance in swallowing and pain in the right half of the chest. In the beginning he could eat solid foods better than fluids, which were usually regurgitated. Ice-water he was unable to drink at all, warm fluids passing down with less difficulty. For a period of two or three weeks at a time the obstruction and pain would entirely disappear, only to return in a more severe form. He was finally unable to swallow any food without taking a few mouthfuls of water to wash it down. Often when the pain was severe, warm water would give relief. Finally the patient was compelled to "fill his gullet with food" and then force it through by drinking hot water. If he did not take water the food would be regurgitated. Often he would leave the table to regurgitate his food and then return and eat again.

Examination.—The patient was tall, slender, emaciated, fairly well developed, with a moderate enteroptotic habitus, costal angle 50 degrees, floating tenth ribs and a mild degree of gastroptosis. The obstruction at the cardia on the introduction of soft tubes was easily overcome.

The cardiodilator was used with almost immediate relief of the spasm. Following two or three introductions the patient was able to eat what he wished, and could even take cold water, which he had not been able to do for months. The esophagoscope was employed a number of times and could easily be introduced into the dilated sac showing corrugated, collapsed walls with mucus and food clinging to them and an injected state of the mucosa. The patient rapidly regained his weight and was able to do hard physical labor.

May 27, 1910: After a year the patient states that he experiences little or no difficulty, if he takes moderate care, in his eating. He must chew his food thoroughly, take plenty

of time to his meals, and finds that he has less difficulty if he takes no cold water with his meals. He must eat nothing that floats on water, otherwise it is apt to come up. He can often evacuate two or three ounces of mucus and saliva through a slight regurgitant effort. The sac is still present and will contain as much as 160 c.c. of water without much discomfort to the patient. This was determined through the employment of a rubber bag in the esophagus gradually filled with fluid until the patient complained of discomfort. Large tubes pass into the stomach without the slightest difficulty. Though the spasm has been practically entirely overcome the dilated sac still remains after one year and continues to produce mild symptoms. It has been possible to remove food remnants when the patient was not aware of their presence.[1]

CASE 10.—*Patient.*—O. F., aged 8, seen October, 1909, was an eight months' child. There was no evidence of lues in him or his parents. He had never been well or strong. He began vomiting within a month after his birth, when he was put on artificial food because of insufficient mother's milk. Up to six months he developed fairly well, but was always under normal weight. Throughout life he had spat up more or less of his food immediately after taking it, with no retching or straining. He was always constipated and passed little urine. He began teething at 1 year and walking at 2 years of age. When solid food was begun, vomiting became even more marked. The patient developed very slowly physically, but was always alert mentally. During the last two or three years he had occasionally had a week of freedom from vomiting, but this was seldom. He was frequently compelled to get up from the table to vomit, and would return to eat more. He complained at the time of observation that the food "lodged under the breast-bone," seldom accompanied by pain. He lives practically on fluids, because of the distress caused by solids. He had been treated for all forms of stomach trouble, though a stomach tube had never been inserted prior to my first examination.

Examination.—The patient was a small, frail, emaciated, anemic child, weighing 36 pounds and appearing to be about 5 years old. He had lobulated tonsils and adenoids, a number of small, palpable cervical glands. The junctions of the second, third, and fourth ribs with the costal cartilage were prominent. There was a floating tenth rib, costal angle of 50 degrees, movable right kidney, etc. A small, soft rubber, nasal tube, 22 F., encountered an obstruction 26 cm. from the teeth, making it impossible to pass the tube into the stomach, even with a mandarin. Paraffin-covered bougies varying from 22 to 26 F. were carefully forced through the constriction with considerable discomfort to the child, the operator gaining the impression that the bougies suddenly passed through a hard, annular, circumscribed stricture. When given half a glass of water the patient was very uncomfortable until permitted to eructate it, which he did without the slightest effort. On swallowing there was no second murmur to be heard anteriorly or posteriorly over the region of the cardia. When large bougies were passed a very small quantity of blood-tinged mucus would follow. The sacculation of the esophagus would contain about three ounces of fluid. The examination of the stomach contents showed a normal motility and a slight superacidity; free hydrochloric acid 56, total acidity 80.

Course of Disease.—After the introduction of the larger bougies, up to size 34 F., the patient was able to swallow solid foods with little difficulty, so that forcible stretching with the bag was not resorted to until it was found that the cardia would again contract. Stretching was then resorted to on three or four occasions. The patient now partakes of every kind of food, liquids and solids alike, without any difficulty. On June 1, 1910, the patient had been under observation for about six months and had gained 10 pounds, about one-quarter of his entire body weight.

CASE 11.—*Patient.*—J. G., aged 58, seen August, 1908, for two years had complained of "a clutching pain" under the sternum, at times extending into the right arm, especially after exertion and after eating. If he would lie down after meals the pain would not occur. Six months after this trouble he began to have pain when swallowing. The food would pass into the stomach without difficulty, but cause "burning" pain as it passed down. The appetite was good and the bowels regular. There was slight dyspnea on exertion. The patient had lost 25 pounds in the last two years; had had much to worry about.

Examination.—There was a mild degree of arteriosclerosis, a slight accentuation of the second aortic sound, blood-pressure 125. Further examination was entirely negative. The case was considered one of mild arteriosclerosis, with angina and accompanying nervous dyspepsia. About eight months later the patient returned complaining of considerable difficulty in swallowing and pains during deglutition. Food seemed to lodge at end of sternum, and he was often compelled "to spit it up." There was great distress after meals until the food had been forced into the stomach. The stomach-tube and bougies encountered an obstruction at the cardia, which it was possible to overcome. On the introduction of the stomach-tube into the esophagus 2 to 4 ounces of viscid fluid could always be removed containing food remnants, a trace of lactic acid, and always more or less sugar. The test breakfast removed from stomach showed free hydrochloric acid, 44, total acidity, 60, with normal motility.

Course of Disease.—The patient obtained considerable relief through the use of dilator and stretchings, which were carried out once and twice a week for a period of three months. There was at no time any bleeding on the introduction of either the sounds or the dilator. Frequent palpation of the abdomen failed to reveal the slightest evidence of any tumefaction in the epigastric region. There was no cachexia or high degree of anemia. Though able to eat much better the patient did not regain weight. It soon became impossible to introduce large bougies through the stenosis and a very small shot on the end of a thread did not find its way into the stomach. Frequent efforts were made with all sorts of devices to get through the cardia, but this was seldom successful. Even if the dilator was successfully used the patient obtained no relief. In view of the rapid emaciation it was deemed advisable to dilate the stricture from below. There was still no cachexia, no tumefaction and no blood in the feces or stomach contents. The dilatation of the esophagus was very evident from the amount of fluid that it would contain and was also revealed by the *x*-ray. The gradual development of the trouble through a period of two years with the dilation of the esophagus seemed to justify a diagnosis of cardiospasm. A laparotomy revealed an infiltrating carcinoma, scirrhous type, involving the entire cardiac portion of the stomach with the fundus contracted down to the size of a large hen's egg under the left lobe of liver and margin of ribs, the pars pylorica being entirely free. An attempt was made to feed the patient through a gastrostomy, but he died within four or five days.

3894 Washington Boulevard.

1. This patient has since died, having developed acute tuberculosis. The autopsy findings confirmed the diagnosis of dilatation of the esophagus, without anatomic stenosis.

STRANGULATED CONGENITAL UMBILICAL HERNIA

I. R. MAERCKLEIN, M.D.
OAKES, N. D.

As strangulated congenital umbilical hernia is rare, I report the following case:

History.—July 7, 1910, I was called to attend Mrs. A. in confinement, but arrived twenty minutes too late, the call being nine miles in the country. I found that the baby had a congenital irreducible hernia. Having answered the call hurriedly I had forgotten my pocket case, so after ten minutes futile taxis, I instructed the parents to keep cloths wrung out of hot water on the hernia during the night and told them that I would return in the morning to operate on the child.

Operation.—The next morning, after again trying taxis and failing to reduce the contents of the sac, I operated,

opening the sac, which contained about one foot of cecum and ascending colon and eighteen inches of ileum. Being unable to reduce the contained intestine *en masse*, due to adhesions of bowel coils and constriction at the umbilical opening, I broke up the adhesions and incised the constricting bands of the umbilical opening upward and to the left. The bowel loops being considerably inflamed, hot salt solution was applied on sterile towels and the intestines then returned to the abdominal cavity. The sac was then tied and cut off at the umbilical aperture and its stump returned intra-abdominally; with a catgut suture the peritoneum was reunited. Three silkworm-gut sutures were then "purse-stringed" around the remaining opening and tied. I next applied antiseptic dressing of iodoform gauze. The wound healed very nicely.

Subsequent History.—On the fifth day following operation, a hydrocele of the cord developed, which two days later burst spontaneously, discharging about two ounces of pus. The small opening in the scrotum was enlarged and antiseptically dressed, after which the babe made an uneventful recovery.

Remarks.—During the entire operation, from 10 to 12 drops of chloroform were given to quiet the child's movements, the baby (then only 12 hours old) taking the anesthetic fairly well.

A UVULA FORCEPS AND A COMBINED TONSIL SCISSORS AND SEPARATOR

HENRY R. BOETTCHER, M.D., CHICAGO

The fewer instruments one has to deal with in the tonsil operation, the more quickly and successfully can the tonsil be removed. The scissors illustrated here have a keen knife edge, extending completely around the outer margin, making them when closed a double-edged curved separator. This places at once in the hands of the operator in a single instrument a pair of scissors and a double-curved separator to be used in the usual way.

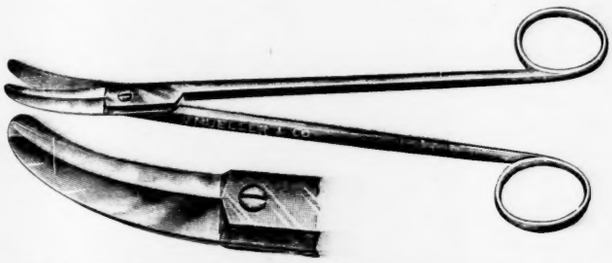


Fig. 1.—The tonsil scissors with knife edge around outer margin, making a combination of scissors and separator.

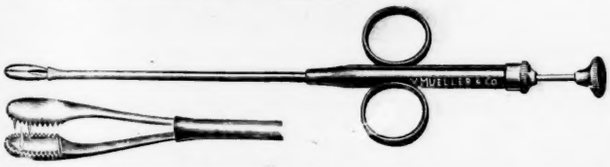


Fig. 2.—The uvula forceps, to hold the uvula out of the way during operations on the tonsil.

In the tonsil operation there is always more or less danger of the uvula being injured, and especially is this true where the snare is used, a piece or all of the uvula being looped up and snared off. To overcome this point I have been using the forceps here shown by which the uvula is grasped and held out of the way by an assistant.

I find also that applying the uvula forceps as the first step in the tonsil operation assists to uncover the head of the tonsil, and by outlining the pillars makes it easier to grasp the submerged tonsil, and also to separate the pillars from the tonsil. The spring in the forceps is sufficiently strong to hold the uvula for all purposes, but does not mutilate it.

34 Washington Street.

A NOTE ON THE TREATMENT OF TYPHOID

LOUIS M. WARFIELD, M.D.
WAUWATOSA, WIS.

A recent epidemic of typhoid afforded opportunity for observing over one hundred consecutive cases from the laboring class. Many patients had been ill from two to seven weeks and were even desperately ill on admission. A procedure which has seemed to have been life-saving and which, so far as I know, is not mentioned in any books or articles (except in the treatment of bowel hemorrhage), is the following:

The beds of all seriously affected patients are elevated on blocks placed beneath the feet of the beds. The elevation is from 9 to 12 inches.

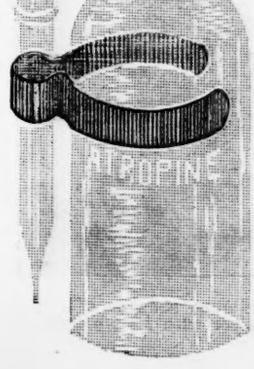
The position is not at all uncomfortable. We have kept patients in this inclined position for two to three weeks continuously. This position, we believe, tends to keep the blood near the vital centers and causes less work on the part of the heart. When the pulse has been very rapid, the blood-pressure very low, and the patient seemingly *in extremis*, we have applied the method of Crile in the experimental recovery from profound shock. That is, we have bandaged the legs tightly from the toes to the thighs, and have drawn a binder as snugly as possible around the abdomen. The foot of the bed is also elevated. To bandage the legs we use first raw cotton, torn in strips about eight inches wide, wrapped around the legs. A six-inch muslin bandage is then wound around the cotton, an assistant holding the leg well elevated. The pressure is made firm and evenly distributed. These bandages are left on for two hours, removed for an hour or two and replaced for two hours, as often as occasion demands.

Observations made with the Janeway sphygmomanometer have not been conclusive in demonstrating an increased pressure in the brachial artery. Further observations will be reported later, with full records of results for the past year.

The impression gained by us is that we have saved some of our desperately ill patients. For instance, one patient, now well, had for three days a temperature which ranged from 105 F. to 106.4 F.; she had involuntary bowel movements and urination, and was covered over the chest and abdomen with furuncles, many of which necessitated opening and daily dressing. I feel that our results from the employment of this simple, yet rational means of treatment have been so uniformly excellent that I offer it to the profession with the hope that it may aid in further reducing the mortality, which in such a hospital as this is close to 10 per cent.

MEDICINE-DROPPER CLIP

PERCY R. WOOD, M.D., MARSHALLTOWN, IA.



Ordinary droppers are constantly being broken, lost or inadvertently exchanged for others previously impregnated with medicaments. When combined with the stopper they corrode and disintegrate, and for various reasons become useless. The result is that one seldom has on hand a perfectly reliable sterile and serviceable instrument. To overcome this difficulty I have had made, as here illustrated, a blued steel clip, which springs securely over the sides of the bottle and at the same time holds firmly a common rubber pipette, which, after using, is readily returned, to be at hand when wanted, and which, being cheap, is easily replaced.

Special Article

THE HOME OF THE ASSOCIATION

A BRIEF HISTORY OF MATERIAL PROGRESS AND OF THE GROWTH OF THE ASSOCIATION BUILDING

CHAPTER II. THE ERECTION OF THE NEW BUILDING

As stated last week, in spite of twice enlarging the original plant, once by adding a fourth story to the building and extending it in the rear, and a second time by occupying

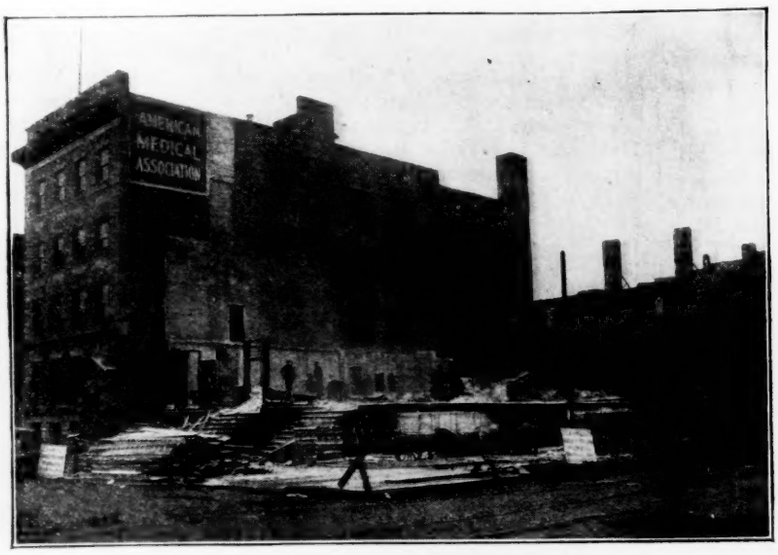


Fig. 4.—Wrecking the old buildings.

one of the adjoining houses, more room became a necessity, even though there should be no further development in the various enterprises carried on by the Association, and no further increase in the circulation of THE JOURNAL.

After due deliberation, the Board of Trustees decided that the next step must be the erection of a first-class building on the main corner of the Association's property. The board, therefore, instructed the architects, Holabird and Roche, to prepare provisional plans for a new building.

This was accordingly done, and the proposal to erect a new building, with these provisional plans from the architects, and an estimate of the cost, were submitted by the Board of Trustees to the House of Delegates at the Atlantic City Session in 1909.

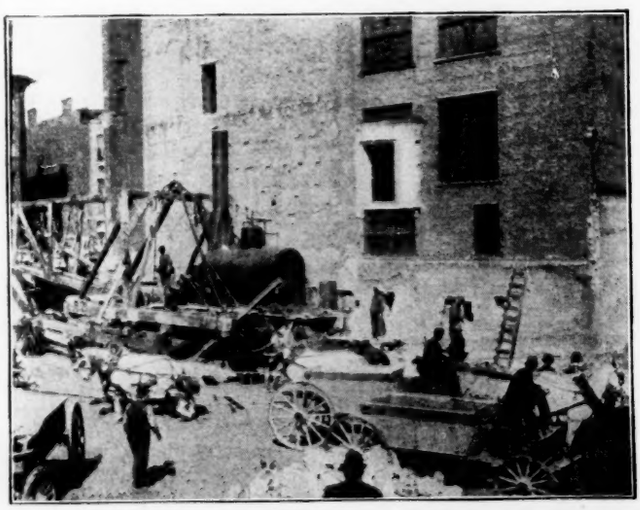


Fig. 5.—View looking toward the old building, showing the work of excavation still going on and the pile-driver with its power-plant being placed.

THE NEED FOR WORKING SPACE

The report of the Board of Trustees in presenting this question is interesting:

"The Board of Trustees is called on to meet and handle many problems, but there is one question that continues to rise before it again and again. This is the question of working space in our building. When the present building was erected it was thought ample for our needs for a considerable time to come, but no one then dreamed of the work expanding so rapidly as it has. Three years ago the building was extended to the full depth of the lot and raised an additional story, which is all the walls will stand. The additional room thus acquired was soon fully occupied, and last year it became necessary again to enlarge our space by extending to the limits under the sidewalk and utilizing the space in one of our buildings next door. The relief, however, was relatively slight, and now we are once more confronted by the same problem, but in a more serious way. Additional space is urgently needed in practically every department. Since the councils and standing committees have become active working bodies and since the permanent working forces of these bodies have wisely been centralized in our own building, our entire clerical force has been augmented materially and is at present unavoidably crowded and badly quartered. We need more space for linotype machines and for our stereotyping department. We are working our

Fig. 6.—Another view of the excavation with the pile-driver at the left and some of the 50-foot piles. Holes in the ground show where piles have already been driven.

men in two shifts of eight hours each and on rush days they are worked overtime in two shifts of ten hours, thus keeping our mechanical departments in operation for twenty hours out of the twenty-four. . . .

"Your Trustees have given this matter careful consideration for some time, and after thoroughly discussing the matter with our architects and with our general manager we are unanimously of the opinion that the only solution of the question is the erection of a new building large enough not only to accommodate us now, but to allow for our growth for many years to come. We already own the ground adjoining our present building and the available funds and securities will permit the construction and equipment of the building as proposed. In view of the urgent need of more room we believe the work should be undertaken at once. The matter is therefore submitted for your consideration. Owing to the great urgency, however, the board has gone ahead and secured, provisionally, architects' plans and construction bids, believing that its action would meet with the approval of this body. The estimated cost of the new building, for which the plans

will be submitted to the House of Delegates, including architects' fees, is approximately $200,000."

The Board of Trustees which made this report consisted of Drs. William H. Welch, Miles F. Porter, M. L. Harris, W. W. Grant, Philip Marvel, W. R. Townsend, Philip Mills Jones, and W. T. Sarles. Dr. T. J. Happel was also a member, and was present at the board meeting when the matter was discussed, but died May 24, and his name is not attached.

The reference committee of the House of Delegates to whom this question was referred, made the following report:

"This committee is advised that with regard to the project of erecting a new building the conditions are as follows:

"The money is on hand for the enterprise in the shape of bonds, certificates of deposit in banks drawing interest, and cash on hand. The building can be erected without incurring indebtedness and without curtailing the present work of the Association or its committees. The old building can be let for manufacturing purposes, returning a good interest on the money invested.

"The building will enable the Association to conduct its business more economically than at present on account of the present necessity of "overtime" work with double pay, due to the lack of sufficient room. It will provide sufficient space in which to install the working headquarters of the various councils and standing committees, which is essentially the accomplishment of results. The Association already owns the land on which the building is to be erected.

Fig. 7.—View of the excavation with the pile-driver in action.

"It is therefore recommended that the Trustees be given full authority to proceed in the matter of erecting the proposed building.

"DONALD CAMPBELL, J. W. PETTIT, D. S. FAIRCHILD,
"E. DENEGRE MARTIN, ALEXANDER R. CRAIG, Chairman."

BUILDING AUTHORIZED

This report was adopted by the House of Delegates, and thus the Board of Trustees was authorized to go ahead with the erection of a new building according to final plans to be approved by them.

The instructions to the architects specified two general principles to be kept in mind: first, that the new building should be a strong one, sufficiently so to bear any reasonable weight on any floor, and second, that it should be absolutely and positively fireproof. The plans and specifications prepared by the architects provided for a fireproof structure six stories in height with a high basement, covering the whole lot, 60 by 120 feet in size, with provision for future enlargement by the construction of additional stories.

THE EXCAVATION FOR THE FOUNDATION

The design and specifications submitted by the architects having been accepted, the contract was let to the firm of McCarty Brothers, and in March, 1910, workmen began to raze the old building which covered the site (Fig. 4). This work proceeded rapidly, the old material being carted away as fast as torn down, and soon the workmen began widening and deepening the excavation. It took about six weeks to complete this work.

Fig. 8.—General view of the excavation and the old building, with the pile-driver in place.

The first essential of a strong building is that it shall have a solid foundation. In order to make a solid foundation for this building, piles were first driven into the solid earth (Figs. 5, 6, 7 and 8). Three hundred and seventy-seven piles, or in other words, 377 cypress trees, 50 feet long and 14 inches in diameter at the butt, were used in forming the basis for the foundation.

The driving of a large number of piles in an excavation near the walls of another building has the effect of first raising and later lower-

Fig. 9.—Wall of the old building, showing the method of preventing collapse or damage to the building by the driving of the piles.

ering the latter to such an extent as to make it liable to collapse. To prevent this bricks were taken out of the wall, as shown in the illustration, and jack-screws inserted the whole length of the building to support the wall, and any variations were adjusted by lowering or raising the jacks. These jacks were allowed to remain in the wall until the wall had adapted itself to the new conditions (Fig. 9).

In a later issue we shall describe and illustrate the further progress of the work.

CULTIVATION OF SARCOMA OUTSIDE OF THE BODY

A SECOND NOTE *

ALEXIS CARREL, M.D., AND
MONTROSE T. BURROWS, M.D.
NEW YORK

We have succeeded in cultivating a very malignant sarcoma outside of the body. The purpose of the experiments was to develop a general method which would permit a study of the evolution of tumor tissue under known conditions and to observe living cancer cells at every instant of their growth.

We used a fowl sarcoma that Dr. Rous has propagated from generation to generation for more than a year. Through the kindness of Dr. Rous, two chickens with actively growing tumors were placed at our disposal. Four series of cultures were made with fragments of the tumor extirpated from the animals in four different operations. The cultures started to grow after a very short latent period. While normal tissues of adult dogs and of young kittens began to develop respectively about forty-eight hours and twelve hours after inoculation of the plasmatic medium, sarcomatous tissue of the chicken showed, in some cases, evidence of activity after two and one-half hours. Fusiform cells appeared on the edge of the tissue and after five or six hours, many elongated cells and chains of cells could be seen radiating out into the culture medium. This rate of growth approximates that observed by Burrows in sixty-hour-old chick embryos. After a very short time, the cultures reached their period of full vegetation. The growth of the tissue was extremely rapid. In a culture of the fourth set of experiments we saw, after the tenth hour, a large area of new cells surrounding the fragment of tissue. The surface area of this new growth was greater than the area of the original fragment. At the end of the first twenty-four hours the surface of the new tissue in one of the cultures was fourteen times that of the original fragment. After forty-eight hours this area might reach twenty-two times the size of the original fragment. Associated with this wide extent of new tissue was a slight decrease in the size of the old fragment. It showed that the new growth was partly built of cells wandering from the original fragment into the plasmatic medium. This wandering of cells is a phenomenon frequently noticed in the cultivation of normal tissue. But the new tissue was also composed of new cells. In a culture fixed and stained after twenty-four hours, we observed many karyokinesis figures. The new cells are morphologically different from the chick embryonal cells. They are round, fusiform or polygonal, filled completely or partially with large refractive granules. They grow in many layers in the medium and are apparently little influenced by the architecture of the fibrin net.

The nature of the plasma has a marked influence on the growth of the tumor. In seven cultures, the plasma of a normal animal was used. Only two positive results were observed. In six test cultures we employed the plasma of the animal from which the tumor had been extirpated. Six positive results were obtained. We have endeavored to cultivate sarcomatous cells in series in order to obtain a pure culture of the more virulent elements. The second generation grew very easily. The original tissue and the adjacent new cells of a culture were extirpated, and the free space left by their removal in the old culture medium was filled with new plasma. The surface of the old medium was also covered with new plasma. In every case the sarcomatous cells entered immediately the new medium. In twenty-four hours long chains of fusiform cells spreading out from the area covered by the sarcoma cells could be seen invading the new medium. On the fifth day of the culture the cells were still in full activity. Up to the present, perfect second generation has been obtained.

These results show that sarcomatous tissue grows luxuriantly outside of the organism, that a second generation can be produced by the cells grown in a first culture and that the whole process can be observed with ease at every instant of its evolution. It is probable that the malignant tumors of the human organism can, in a similar manner, be caused to grow outside of the body. The method, therefore, will be a valuable addition to our means of studying the problem of cancer.

* From the laboratories of the Rockefeller Institute for Medical Research, New York

Therapeutics

PROSTATITIS AND SEMINAL VESICULITIS

During the last decade or more great advance has been made in our knowledge of the etiology and treatment of disease of the prostate gland. It is proposed at this time to discuss only its acute inflammation and not its chronic hypertrophy. The most frequent, and the only frequent cause of inflammation of this gland and of the seminal vesicles is gonorrhea. Without regard to the importance of acute inflammation of these parts the chronic and persistent harboring of the gonococcus by these organs, making the carrier of these germs a menace to himself and others, makes the subject of vast importance. It is hardly necessary to state that most gynecologic inflammations are due to the gonococcus, and most frequently the infection is received innocently and is due to a latent gonorrhea, or a chronic prostatitis or vesiculitis due to an uncured gonorrhea. Chronic gonorrheal infection of the prostate and seminal vesicles is of frequent occurrence. The symptomatic evidences may be slight. There often is an increased frequency of urination; there may be a feeling of fullness or uncomfortableness in the perineal region; there may be a slight sticky, or mucopurulent exudate and the urethral drop, and the urine may be cloudy. On the other hand, the urine is not always cloudy with this subacute or chronic prostatitis.

While it is probably rare to find gonococci in prostatic exudate a year after the original infection, it does occur, and before a year the gonococci may be frequently found when there are no apparent evidences of the previous gonorrheal infection. When from massage of the prostate and stripping of the seminal vesicles the exam-

ination of the slide from the drops of secretion exuded from the urethra show gonococci, of course the diagnosis is positive. If such an examination shows no gonococci in a suspected individual, it has been suggested that from 1 to 2 c.c. (5 to 10 minims) of a 1 per cent. solution of nitrate of silver be injected into the posterior urethra with the Ultzman syringe. The stimulation from this injection will cause, the next day, an increased discharge, which should cause gonococci to be found on microscopical examination, if they are still present.

Besides the local symptoms above described of chronic prostatitis, patients who are suffering from this condition often have symptoms of neurasthenia and hypochondriasis. Men otherwise well, with no apparent cause for symptoms of nerve tire, should be carefully questioned as to previous gonorrheal infection, and the prostate and any secretion that can be expressed from it should be carefully examined, even if the local symptoms are negative.

Therefore, too great importance can not be ascribed to, and too great care can not be taken in, determining that a patient who has had gonorrhea is free from gonococci and is cured of chronic inflammation before he is dismissed from treatment. This means not only frequent examinations by the microscope of slides prepared from actual urethral discharge, but also any discharge that may be expressed from the prostate and seminal vessels, and until such examinations are negative the patient should never be discharged, and lest he stop treatment before he is cured, he should be thoroughly cautioned in the beginning of his treatment of the persistency of this particular germ and the absolute necessity for a complete cure for his own and his family's future.

Acute gonorrheal inflammation of the posterior urethra is, of course, readily diagnosed by the cloudiness of the urine. A later involvement of the prostate or seminal vesicles is diagnosed by the finger passed well up the rectum and noting the enlargement and tenderness of the prostate, and, if the seminal vesicles are involved, by noting their fullness and tenderness. Normal seminal vesicles are hardly palpable.

Acute inflammation of the prostate and vesicles should be treated with rest, a diet of milk and simple cereals, plenty of water should be taken, and hot sitz baths once or twice a day. The urine should at first be rendered alkaline with potassium citrate during the acute irritation, and later hexamethylenamin or salol (phenyl salicylate) should be administered. There should generally be no urethral injections and no manipulation of the prostate, and certainly no passing of instruments into the urethra. If the prostatitis becomes localized and causes an abscess, of course the treatment is surgical interference.

In subacute prostatitis the prostate should be gently massaged, and some of the exuded fluid which is received on a glass slide should be examined under the microscope for pus and gonococci. Generally, there will also be found living spermatozoa and often dead spermatozoa, with prostate epithelial cells, and perhaps crystals of spermin. The tenderness of the prostate determines the frequency and the amount of massage that it should receive; perhaps every second day for a short time, and then twice a week. At each massage the seminal vesicles should be thoroughly stripped. During this subacute inflammation all violent exercise must be prohibited; alcohol should certainly not be allowed, and the patient is usually better without tobacco than with it. Tea and coffee, if allowed at all, should be in small amount. Constipation should never be allowed in any prostatitis. It is always best to wear suspensory bandage during acute gonorrhea, and during acute and subacute inflammation of the prostate.

The prognosis is good if the patient will give himself the proper rest in the acute condition, if he will take care of himself in the subacute condition, and will persist long enough in his treatment of the chronic condition.

If gonococci are present in this secretion in subacute or chronic inflammation, vesical injections of weak silver solutions, such as from 1 to 500 to 1 to 1,000 of one of the albuminate silver preparations, should be given daily or every other day, and at least every other day or generally every day the prostate should be massaged while the solution is in the bladder. The patient then urinates and thus washes out the bladder. These bladder washings should soon be less frequently repeated, and as soon as the gonococci are found absent from the prostatic secretion, the bladder injections are given only infrequently. A microscopic test should be made once a week for three or four times, and then again in a month. The gonococci remaining absent, the patient may be considered cured of the infection. The old assertion that when the gonococci had infected the prostate vesicles the patient could never be cured, but harbored them for the rest of his life, is probably not now true if the affected individual will allow himself to be properly treated before the germs have found a more permanent harbor deeper within in the glandular tissue.

In chronic prostatitis without gonococci, or after the gonococci have disappeared, besides massage of the prostate once or twice a week, local applications can be made by high injection of from 1 or 2 c.c. (5 or 10 minims) of various silver solutions, the strength of which should vary from 1 to 3 per cent. Instillations should not be used more frequently than once in 5 days. Ichthyol solutions have also been used for this purpose. The cold sound is occasionally of as much advantage in the posterior urethra as it is in gleety conditions of the anterior urethra. Not infrequently the double closed catheter, which allows the circulation of cold water, is one of the best tonic treatments of the posterior urethra and prostate. Such treatment is indicated only in the chronic form of the inflammation when the prostate has not returned to its normal size, normal tone and normal feel.

Like any other inflammation that has become chronic, a patient who has become neurasthenic and mentally disturbed, and perhaps below par physically, should receive tonic treatment and such a vacation as he may be able to take, and the local inflammation will often rapidly improve when it has not improved under more active medication. It should be urged that after the gonococci have disappeared, too long use of instruments should be discouraged.

THYROID

Reid Hunt, in recent experiments on the effect of foods on the activity of the thyroid, has proved, by the tolerance of animals for certain poisons, which tolerance varies with the activity of the thyroid (*Bulletin No. 69, Hygienic Laboratory, Public Health and Marine-Hospital Service*), that dextrose, oatmeal, liver and kidney stimulate the thyroid gland to greater activity.

It was already known clinically that patients with exophthalmic goiter, or, more definitely, with hypersecretion of the thyroid, did better not only without foods rich

in purins, such as liver and kidney, but also without meat of any kind. It was not known, however, that dextrose and oatmeal stimulated the thyroid. Theoretically, then, oatmeal should not be allowed a patient with exophthalmic goiter.

It of course has been known that the administration of thyroid stimulated the thyroid gland, but Hunt shows that other glands, especially the prostate, ovaries and testicles, are stimulant to the thyroid, while thymus, parathyroid and suprarenals seem to have the opposite or depressant effect on the thyroid.

Eggs, milk, cheese and various fats were apparently shown in these experiments to decrease the activity of the thyroid gland.

These experiments are of great therapeutic value when we apply the knowledge thus gained to the treatment of hypersecretion and hyposecretion of the thyroid, and a very tangible part of the practice of medicine is concerned with the correction of the disturbances in the secretion of the thyroid gland.

DIPHTHERIA

Diphtheria is a local infection, and if immediately or soon eradicated, general infection will not occur. The toxin produced by this germ is a circulatory and nerve depressant, and it is this action of the germ that causes it to be so dangerous to life. A large part of the symptoms of throat and nasal diphtheria is due to septic poisoning: in other words, secondary infection from the putridity occurring in the throat. This secondary infection generally represents neglect, medical or lay.

It is well recognized that it is often impossible to make a diagnosis of diphtheria on the first examination of a patient who has a suspicious throat. Generally spots or membrane on the tonsils, whitish in color, rather readily removed by means of a swab, with temperature above 102 F., headache, lumbago and other muscle pains, with a pulse of good tension, show that it is a streptococcus infection and may be termed follicular tonsillitis. In true diphtheria, *i. e.*, infection with the Klebs-Loeffler bacillus, the patient is often found on the first visit with low temperature, soft pulse, no great muscle pains, a throat that is not badly swollen or painful, suspicious dark red patches in the throat; such exudate as is present generally in membrane may, however, be small in amount and of a grayish color, not readily removed with a swab. As just stated, these diagnostic signs are not positive, and should not be positively relied on. If the cervical glands are enlarged, it points rather more strongly toward diphtheria. On the other hand, a diagnosis should generally be made before the glands of the neck have become enlarged from diphtheria. Tender and enlarged glands, however, readily occur from any throat infection. While a probable and many times positive diagnosis can be made from these clinical signs, often only a bacteriologic examination (from a culture made from a sterile swab brushed over a suspected tonsil or pharynx) can make the diagnosis positive.

Successful treatment of this disease means that: (1) infection of others does not occur; (2) any odor coming from the throat or nose is not present after the first twenty-four hours of treatment; (3) the nutrition is kept up; (4) great cardiac weakness does not occur; (5) no subsequent paralysis occurs; (6) the patient has thoroughly recovered his muscular and heart strength before he is considered fit to return to his occupation, school, or strenuous plays. This means that his convalescence should be carefully supervised.

TREATMENT BEFORE A DIAGNOSIS HAS BEEN MADE

1. *Isolation.*—Every suspicious throat should be isolated. This requires no discussion; it has been proved not only from the personal experience of every physician of the contagiousness of even ordinary colds, but from the bacteriologic discoveries that have shown the different kinds of germs that cause different kinds of colds and sore throats, and that many of these particular germs occur in other persons closely associated with the one first infected. When there are spots or membrane in the throat, isolation must be insisted on. In fact, while the results are not so serious from so-called follicular tonsillitis and pharyngitis and streptococcus infection, the contagion is more rapid and infection more easily acquired from these than from true diphtheria. Therefore, always isolate. This means keeping the infected patient in one room, with some one person to care for him; a proper care of drinking and eating utensils; the use of cheesecloth or pieces of old cotton cloth or old handkerchiefs for the secretions from the nose, throat and mouth, to be placed in a paper bag after use and the bag and its contents burned. The gargling should be into antiseptic solutions, and care should be exercised that there are no spatterings during the gargling on anything that cannot be thoroughly cleansed. A newspaper spread over the bed or on a chair on which is placed the gargling basin is the best method for cleanliness; the paper can then each time be burned. If the nurse, or the patient himself, if he is an adult, thoroughly washes the face and hands after gargling, and exercises the simple care suggested, infection of others cannot occur.

2. *Hygiene.*—The most suitably situated, sun-lighted, and well-ventilated room should be selected for the patient, and if possible it should have ready access to a bathroom. As is so well understood with all contagious diseases, as soon as the diagnosis of diphtheria is positive, unnecessary draperies, rugs, and upholstered furniture should be removed from the room. The patient should receive hot sponge baths daily.

3. *Diet.*—A simple diet suited to the amount of rise in temperature the patient may have is correct during the first day or two of the illness, or throughout the illness if it proves to be follicular tonsillitis and not diphtheria.

4. *Bowels.*—As in all fevers and all infections, it is necessary to administer a purgative first, which will clean the alimentary canal, reduce the temperature, and prevent the absorption of toxins from constipation, which almost always occurs in the first stage of a fever, and especially of an infection. Perhaps the best cathartic is calomel. The dose need not be large, and is best administered in one single dose and not in divided doses. An ordinary aloin, belladonna and strychnin tablet given with one or two grains of calomel, administered with a little milk, generally produces splendid catharsis without griping. Of course a more quickly acting purgative may be administered if desired. It has been claimed that calomel in divided doses has a specific action on the throat, causing an increased secretion of mucus and aiding in the loosening of the membrane; consequently, many physicians advise that a 1/10 grain tablet of calomel be administered every hour until ten or more have been taken, or until the bowels begin to move. With this method of administration, salivation may be caused, and, in fact, it is only by this increased flow of saliva and mucus that the calomel can have much specific action in the throat. Many years ago

calomel was used in good-sized doses for this purpose, but such use is inexcusable. After the action of the purgative, on the following day or on the second day, the bowels should be moved with any gentle laxative if they do not move of themselves, and after this time the bowels must move daily. It cannot be too much emphasized that the more perfect the normal activity of the intestines, the fewer toxins accumulate in the blood, the less the liver is disturbed by resorbing old bile and products of indigestion, the better it is able to act as a Pasteur filter to the blood, and the better the blood is able to form its antitoxins and fight the infection. For this same reason there never should be over-feeding or mistaken feeding in diphtheria or any other infection. A good laxative in diphtheria and of advantage in most infections is yeast. From 1/8 to 1/6 of an ordinary moist, compressed yeast cake, dissolved in a glass of water (less quantity for a child) makes a sour drink that is both a laxative and a preventive of bowel fermentation. It also stimulates, on account of its nuclein, the production of white blood-cells which are needed to fight infection. Yeast may also be of value as a gargle in membranous throats.

5. *Local Treatment.*—This is of primary importance in follicular tonsillitis, and is secondary in importance only to antitoxin in diphtheria. It is absolutely inexcusable to administer antitoxin to a patient with diphtheria and expect the throat to care for itself. There is no medical or surgical condition so responsive to continual and repeated care as is diphtheria of the throat and nose. There is no excuse for a disagreeable odor emanating from the mouth or nose in diphtheria after the patient has been under treatment for twenty-four hours; and there is probably but little opportunity for the spread of infection after the patient has been under treatment for twenty-four hours. It must be again urged that this disease is at first local, and is not a general disease, and the more completely the throat is cared for, the less absorption of the toxins of the specific germ and the less absorption of toxins from the pus germs and the germs of putrefaction.

The local treatment, then, consists of gargles, sprays, and insufflations. The best gargle is solution of hydrogen peroxid. It should be diluted with from 1 to 3 or 4 parts of warm water, and this should be gargled thoroughly every three hours during the day and every four hours during the night. About two or three minutes after the peroxid gargle the patient should wash out the mouth and throat with either a Seiler's tablet solution (a tablet dissolved in 1/3 of a glass of warm water), a saline solution (¼ of a teaspoonful of salt to a half a glass of warm water); or the liquor antisepticus alkalinus (N. F.) diluted with equal parts of warm water. This is to remove the irritant caused by the chemical action of the peroxid, and it also soothes the mucous membrane. Also every three hours, alternating with the peroxid solution, the patient should gargle with either a 4 per cent. solution of boric acid or a 5 per cent. solution of potassium chlorate, or the liquor antisepticus diluted with 1 or 2 parts of warm water. The gargling should therefore be done every hour and a half during the day, at one time the peroxid solution and the alkali, at the other time the boric acid or other solution. The intervals at night may be double those of the day. As the patient often tires of gargling, swashing is just as efficient, and with each solution several mouthfuls should be taken.

If the patient is a child too young to gargle, spraying must be done with an atomizer. The same solutions may be used, only more diluted. As spraying is much less efficient than gargling, it is advisable with children, and often with adults, to insufflate pure boric acid directly on the membrane or spots of follicular exudate. The boric acid stimulates the flow of the mucus and causes the secretion to loosen the membrane, and it comes off more rapidly than by any other treatment. In the meantime it acts as a gentle, non-poisonous antiseptic. With these local treatments septic infection cannot occur, and the patient will not die of secondary infection.

If there is much congestion and swelling of the throat, weak suprarenal solutions may be sprayed into the throat, or a suprarenal tablet or a little suprarenal powder may be occasionally dissolved in the mouth. It must be remembered, however, that suprarenal solution should not be used too often, as it is absorbed from the mouth, throat and nasal membranes, and may do harm. If the nose and nasopharynx become involved, warm sprays must be carefully directed into the nostrils, or if the patient is older, gentle nasal douches must be used. The solutions must be much weaker than above described. Boric acid diluted with some non-irritant powder, possibly subgallate of bismuth, occasionally may be blown into the nostrils, and should be blown into the nasopharynx.

6. *Internal Medication.*—In the early stages of follicular tonsillitis, rarely in the early stage of diphtheria, headache, muscle aches and high temperature may call for special medication. The following powder is efficient:

℞	Gm.		
Acetphenetidini	1	50	
Phenylis salicylatis	1	50	
		or	āā gr. xxv
M. et fac chartulas 5.			

Sig.: A powder every three hours.

Or:

℞	Gm. or c.c.		
Acetanilidi	25		gr. v
Sodii bicarbonatis	1	or	gr. xv
M. et fac chartulas 5.			

Sig.: A powder every 2 hours.

More than five doses of any antipyretic will not be needed, and even the whole five may not be necessary, depending on the symptoms. In follicular tonsillitis little other internal medication is needed, except perhaps a tonic to hasten convalescence and complete recovery, such as:

℞	Gm. or c.c.		
Strychninæ sulphatis	02		gr. ⅓
Quininæ sulphatis	2	or	3ss
Ferri reducti	1		gr. xv
M. et fac capsulas siccas 20.			

Sig.: A capsule three times a day after meals.

7. At the first visit, or as soon as possible thereafter, when a throat looks suspiciously like diphtheria, a properly prepared swab should be taken or sent to a bacteriologic laboratory for an examination of the culture.

(To be continued)

Duties of Physicians.—We should not only be torch-bearers for the enlightenment of the people, regarding their bodily and mental welfare, but should also be the guardians of the public health. Although at all times recognizing the rights and liberties of the people, it is our duty to enforce the laws of sanitation and to protect the people from their own ignorance and from the dangers of designing quacks and unscrupulous pretenders.—M. B. Heyman, in *Long Island Medical Journal.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, OCTOBER 29, 1910

DATE OF NEXT SESSION

The Board of Trustees, at its meeting last week, appointed June 27, 1911, as the date for the opening of the next session of the American Medical Association, at Los Angeles. This refers to the scientific session; the House of Delegates will meet on June 26. This date was chosen after considerable study, and is in accordance with the wishes of the great majority of those who replied to the letter of the Chairman of the Board of Trustees, published in THE JOURNAL, September 17. The date will not interfere with those who are connected with medical colleges, and will be more generally convenient for those who desire to take advantage of this occasion for a vacation. At that time of the year the weather is pleasant in Los Angeles; and the season will be ideal, especially for those who wish to go or return by the northern route, taking in Oregon, Washington and Yellowstone Park.

URINARY CHANGES IN CANCER

Scattered items of information concerning metabolism in cancer indicate that we may find eventually that the presence of malignant tissue, even in small amounts, may have a greater influence on the entire organism than was formerly suspected. Repeated attempts to extract from cancers some poison which shows enough activity to account for cancer cachexia have all failed, when properly controlled. Some observers have sought an explanation of this in the production by cancers of enzymes which cause abnormal cleavage of food and tissue elements, thus introducing into the blood unusual and toxic metabolites. Although the direct evidence for this hypothesis is anything but satisfactory, some support for it may be found in the results obtained by Salkowski and by Salomon and Saxe through their studies of the urine of patients with cancer.

About five years ago Salkowski[1] reported that in certain diseases, and especially in cancer, the urine contained relatively large amounts of nitrogen in compounds of colloidal nature, which could be precipitated with alcohol for quantitative estimation. Recently Salomon and Saxe[2] have been studying the occurrence in the urine of one of these colloidal nitrogenous substances, the so-called oxy-proteic acid, and have found that an increase in the excretion of this substance is characteristic of cancer, even in the early stages. Normally about 1.5 per cent. of the total urinary nitrogen is present in this form, the maximum figure not exceeding 2 per cent. Of thirty-eight carcinoma cases, however, in thirty-one the oxy-proteic nitrogen amounted to from 2.5 to 3.5 per cent., and in only three was less than 2 per cent. found. Apparently the size, location and degree of cachexia are not of particular moment in determining the degree of oxy-proteic acid elimination. It is presumable that this oxy-proteic nitrogen and colloid nitrogen indicate an abnormality of cellular metabolism caused by the cancer, in support of which assumption is the fact that similarly high colloidal nitrogen figures are obtained in the urine of advanced pregnancy and in certain liver diseases, both being conditions in which metabolism is notoriously altered.

To the pathologist, these observations are of much significance as adding to our knowledge of the biology of malignancy, but to the clinician they hold forth hope of another point of support in the diagnosis of cancer. The investigators quoted believe that the practical application of their experimental studies will prove to be of much value, especially since the urinary change seems to be present early in malignancy, and to occur in few other conditions likely to cause confusion. Not until the methods of determining these factors—total colloidal nitrogen and oxy-proteic acid nitrogen—have been developed to a degree of simplicity and reliability suitable for routine application in the clinical laboratory, can we hope to secure that great volume of evidence on which alone final judgment can rest; but the needs for help in cancer diagnosis are so pressing that there is no doubt that this clue will be followed to its end with all possible expedition.

1. Berl. klin. Wchnschr., 1910, xlvii, 533.

2. Beitr. z. Carcinomforsch., 1910, ii, 2.

ATTEMPTING TO CRIPPLE THE PURE FOOD LAW

Under the powers given it by the Food and Drugs Act, the federal government has done good work in putting out of business those unconscionable scoundrels who defraud sufferers from cancer by selling alleged cures for this disease. The section of the act under which these people are prosecuted is that which declares a drug misbranded "the package or label of which shall bear any statement . . . regarding such article . . . which shall be false or misleading in any particular." From the simplicity of the wording of the law and from the fact that the intent of its framers was to protect the public, one would imagine that there could be little question as to its interpretation. Such does not seem to be the case, however.

O. A. Johnson, a quack of the "cancer-cure" variety who plies his trade at Kansas City, Missouri, is legally entitled to practice medicine—to the shame of the state be it said. Not long since, he was prosecuted under the Food and Drugs Act on the charge of shipping misbranded drugs, the government contending that, since Johnson implied on the labels of his nostrums that they would "cure cancer" and since such an implication is an unwarranted falsehood, the stuff was misbranded. Such a contention to the man in the street seems conservative enough, and plain enough. But Johnson's trade has been a profitable one—to him—and one that was not to be given up without a struggle. When, therefore, the United States grand jury indicted this "cancer-curer," his attorneys filed a motion to quash the indictment on the ground that the Food and Drugs Act applies merely to the composition or ingredients of the medicaments and not to their therapeutic effects. In other words, the defense is that, so long as an exploiter does not falsify on the label regarding the composition of his nostrum, he may lie to his heart's desire concerning its effects. And, strange to say, Johnson's position was sustained by a federal district judge! Fortunately the Supreme Court of the United States will have a chance to reverse this astonishing ruling.

Should it finally be decided that the ruling as it now stands represents the Supreme Court's interpretation of the Food and Drugs Act, the sooner the act is amended the better. Under the decision of the district judge it would be possible for an enterprising scoundrel, fortified by immunity from prosecution, to sell common salt "Guaranteed under the Food and Drugs Act" as a sure and positive cure for cancer, consumption, Asiatic cholera, or for any other deadly scourge that an imagination untrammeled by conscience might suggest.

To all thinking men, to all men who believe that the Food and Drugs Act was intended to protect the public rather than to afford avenues of escape for conscienceless quacks, to all whose mental horizon is not bounded by hair-splitting legal technicalities—to all, in a word, who feel that it is an outrageous shame that those who are suffering or incurably ill can be defrauded and impoverished under protection of the law—to all such the present ruling on the scope and intent of the Food and Drugs Act must seem deplorable.

ENTRANCE STANDARDS AT THE UNIVERSITY OF MICHIGAN

Last year the entrance requirements of the medical department of the University of Michigan were increased to two years of collegiate work, to include a reading knowledge of German or French and at least a year's college work in each of three sciences, namely, physics, chemistry and biology. An exemption is made, however, for those who enter with the expectation of taking their clinical work under homeopathic instructors; for these, the requirement is simply a high-school education. The peculiar situation is thus presented of laboratory instructors endeavoring to expound the intricate problems of medicine to classes made up in part of college-trained men and in part of those with only a secondary school training. It is inconceivable how a condition of this kind could exist in a state university which has long held so prominent a place among educational institutions as has the University of Michigan.

This difference of entrance standards is eminently unfair to the students. If they lack the proper preliminary training they will fail to grasp the instruction given, or if they enter with the higher qualifications they will be retarded by the more elementary methods required to teach the students admitted on the lower requirement. This diversity of standards is also unfair to the teacher. Furthermore, indications are that this state of affairs is to go on indefinitely. In an apparent effort to forestall the adoption of more equalizing regulations, the members of the homeopathic faculty are reported to have secured the adoption by the regents of a resolution that in the year 1912 the entrance requirements for homeopathic students be increased to one year of collegiate work or its equivalent. This is still one year less of college work than is now required of all other medical students, and no mention is made in the resolution of any requirement of the preliminary sciences.

Equally astonishing is the clause in the resolution which makes this "one year of college work or its equivalent" subject to the approval of the homeopathic faculty! It may be fairly asked: Why such discriminations in the admission of medical students? Why should two such widely varying standards be permitted? And why should special provision be made for the certification of entrance credentials of homeopathic students, when the credentials of all other students who do not hold collegiate degrees are subject to the approval of the dean of the liberal arts department? This disparity of standards of admission would seem to indicate that to master homeopathic medicine requires less preliminary training than is required for other medical courses.

One would suppose that the homeopaths would be the first to demand an immediate correction of this reflection on themselves.

Current Comment

A HEALTH EXHIBIT ON WHEELS

Our local and state health authorities are showing an increasing disposition to use up-to-date methods in educating the public on hygiene and sanitation. In Louisiana the State Board of Health is preparing a "health car," which is to be sent all over the state as an exhibit and as an object-lesson. As it is impossible to bring all of the people to a health exhibit, the board proposes to take the exhibit to the people. A special car has been

donated by Mr. D. D. Curran and Mr. H. B. Hearn, president and superintendent of the Queen and Crescent Route. The car will make its first appearance at the Louisiana State Fair at Shreveport, after which it will start on its journey through the state, crossing on the Vicksburg, Shreveport and Pacific road, thence diagonally across the state again over the line of the Louisiana Railway & Navigation Company, next through the state over the New Orleans and Northeastern, after which it will be transferred from one road to another until the people in every railroad station in the state have had an opportunity to visit it. The car will contain a large collection of normal anatomic specimens in contrast to specimens showing pathologic conditions due to tuberculosis. This exhibit is contributed by the Souchon Museum of Tulane University. Several lecturers will accompany the car and will deliver instructive addresses at every stop. A laboratory has been installed for the examination of milk, water, sputum, etc. At each stop sanitary inspection will be made of the markets, slaughter-houses, schools, churches and other public buildings. Literature on health matters will be distributed. A moving-picture machine will show, at each stop, "The Gymnastic Fly," "The Pesky Fly," "The Man Who Learned" and other story-telling series of pictures, whose educational value is well-nigh unlimited. Lantern-slides showing insanitary conditions existing in various parts of the state will also be used to illustrate lectures. A mere statement of the work to be done by this Louisiana health car is in itself a sermon on the possibilities of public education. The people of Louisiana are fortunate in having a board capable of exhibiting such enterprise, energy and solicitude for the health of the people. A similar exhibit prepared by the State Board of Health of California has done much good and has demonstrated the feasibility of such a plan. If this example could be followed in all of the states and if each state board of health could start such a moving center of instruction, the problems of public education and popular support for sanitary measures would soon be solved.

LET THE ADVERTISEMENT TELL THE TRUTH

According to the press reports government officials recently discussed the plan of extending the power delegated through the Food and Drugs Act to the government to insist on truthfulness in drug advertising, to cover newspaper advertisements. That this position is the only logical one must be admitted. As at present administered, the Food and Drugs Act makes lying on the label illegal but takes no cognizance of the misstatements in advertisements. Under the present limitations of the act, therefore, the nostrum manufacturer who has to restrain his mendacity in writing the labels for his stuff is still able to falsify to the limit of his capacity in his newspaper advertisements. As the majority of nostrum users get most of their information—or misinformation—from the pages of the press it is easy to see that the Food and Drugs Act only indifferently protects the public against this evil. That a large proportion of the newspapers of the country would fight to the last ditch against any such extension of the law as that suggested is doubtless true; yet the number of papers which are taking a high stand in the matter of nostrum advertising is increasing yearly. In Chicago, when the news report regarding the matter appeared, two of the most influential newspapers of the city commented favorably on the suggestion. If the same proportion of newspapers all over the country would take this attitude, one of the greatest movements in the interests of the public health would soon be inaugurated.

WATER-SUPPLY AND SEWAGE-DISPOSAL SYSTEMS AND HEALTH AUTHORITIES

The intelligent cooperation of municipal and health authorities in the provision for water-supply and sewage-disposal systems is the only correct principle to follow. Too often the subject is treated only as an engineering and business problem; and the most important feature—the sanitary—is not sufficiently regarded. Water-supply and sewage-disposal systems are constructed, and their effect on the health of the community is figured out by the health authorities after the systems are in operation and conditions arise which show that the public health is being jeopardized from some cause. An instance of law embodying the correct principle is the law of the province of Saskatchewan requiring the approval of the commissioner of public health before a water-works or sewage-disposal system can be constructed. Any debentures issued for the payment of the cost of such improvements, if not approved by the commissioner, would not be legal, and therefore could not be negotiated. This operates as an effective check on careless methods of providing water-supplies and prevents the adoption of defective sewage-disposal systems, both of which are of the most vital importance in connection with the health of any community.

INFLUENZAL MENINGITIS

There occurs, mostly in very young children, an acute and fatal form of meningitis, caused by the influenza bacillus, or by influenza-like bacilli, which might easily be confused with other forms of meningitis unless carefully studied by bacteriologic methods. Influenzal meningitis appears to be a rare disease, as only about forty cases are recorded, but the fact that Davis[1] ran across seven typical cases in Chicago in little over one year may be an indication that the disease is not so rare as it appears to be. It is a highly and, usually, rapidly fatal disease, the mortality rate being about 90 per cent., and it affects especially young children, the ages in Davis' cases running from five days to thirteen months. These cases occurred at a time when there was no epidemic of influenza. There does not seem to be anything unusual or peculiar about the symptoms in this form of meningeal infection. The cerebrospinal fluid is turbid and contains many polymorphonuclear leukocytes as well as the characteristic bacilli, which are easily overlooked in specimens stained in the ordinary ways, because of being so small. It is well to use dilutions of carbol-fuchsin for

1. Trans. Chicago Path. Soc., 1910, viii, 39.

staining; cultivation is successful only on media containing blood or hemoglobin. After death there is usually a rich, purulent exudate at the base of the brain. It is believed that the infection takes place by way of the nose.

KISSING THE BABY AS A CAUSE OF DIVORCE

One can readily conceive that the conveyance of certain germs might be as legitimate a cause for divorce as many that are now accepted. According to the newspaper reports, however, a California court has gone a little farther than a good many people can follow it, in granting a decree of divorce to a woman whose plea is alleged to have been that her husband insisted on entering her germ-proof nursery and administering kisses to their aseptic baby when "he was fairly reeking with germs collected on the streets" that he frequented in common with the unsterilized public. Kissing has been so long in fashion and its medically demonstrable effects have been so comparatively innocuous in most cases that the advanced ground taken by the California court seems rather extreme. It is true that too much kissing of babies has been medically condemned, but this is the first instance that we have seen of the legal dissolution of marriage for this reason. One would naturally think that milder antiseptic methods than divorce could have been employed.

Medical News

ALABAMA

Vital Statistics.—Dr. William H. Sanders, Montgomery, chief of the department of health, has commenced his second tour of the state in the propaganda to secure more complete vital statistics.

Personal.—Dr. Robert Nelson has been appointed health officer of Birmingham, vice Dr. Robert B. Harkness.——Dr. William H. Oates, Mobile, has been appointed inspector of jails, cotton mills, and almshouses.——Dr. William G. Somerville, Tuscaloosa, has recently returned from Europe and will practice in Memphis, Tenn.——Dr. William W. Dinsmore, Decatur, has been appointed local member of the hookworm commission.——Dr. Albert M. Reid has been elected health officer of Florence.——Dr. Oliver P. Board, Birmingham, has been elected assistant health officer of Jefferson county.——Dr. Abner Farned, Frankfort, is reported to be critically ill.

ARKANSAS

Sanatorium Opened.—The Arkansas Tuberculosis Sanatorium, three miles south of Boonesville, was opened September 1. The buildings are modern, and there is a good system of water supply and an excellent sewerage system.

Personal.—Dr. James W. John, Pine Bluff, has been elected state grand medical examiner of the A. O. U. W.——A health league was organized at Fayetteville recently. Dr. William B. Welch was appointed a member of the committee on program, and Drs. Thomas W. Blackburn, William N. Yates, and Charles F. Adams, were appointed a committee on organization.

CALIFORNIA

Personal.—Dr. Martin Regensburger, San Francisco, has been reelected president of the State Board of Health.——Dr. W. LeMoyne Wills, Los Angeles, has been elected vice-president, and Dr. William F. Snow, Stanford University, secretary of the State Board of Health.——Dr. Thomas B. Roche has resigned as a member of the San Francisco Board of Health.——Dr. Samuel N. Cross, Stockton, has withdrawn from active practice and retired to his ranch at Mantika.

Court Convictions.—Dr. Orra C. Hyde, Oakland, is said to have been fined $100 recently for selling prescriptions containing opium to drug habitués. The fine imposed is the maximum allowed by the state law.——In the case of J. L. Bohannon, Oakland, an advertising cancer specialist, who was fined $300 several months ago for practicing medicine without a license, and who appealed the case, Judge Brown, on October 4, is said to have denied the appeal and affirmed the judgment of the lower court.

Hospital Notes.—The new hospital opened recently in Visalia has been named the Visalia General Hospital.——St. Caroline's Hospital and Sanitarium, Redding, was formally opened September 26.——The Los Angeles Federation of Parent-Teachers' Associations, at its quarterly meeting, decided that the chief effort of the federation for the coming year should be the building of a charity hospital for children to be known as the Parent-Teachers Association Hospital.——The San Joaquin Hospital is practically completed and will, it is expected, be ready to receive patients this month.——The supervisors of Yuba county have made arrangements for building a ward for tuberculosis patients at the County Hospital.

ILLINOIS

Chicago

Tag Day for Children.—As a result of Tag Day, October 17, for the benefit of institutions caring for sick, crippled, and defective children, a sum of more than $60,000 was realized.

Gynecologists Hold Annual Meeting.—At the annual meeting of the Chicago Gynecological Society, held October 21, the following officers were elected: president, Dr. Gustav Kolischer; vice-presidents, Drs. Charles E. Paddock and Rudolph W. Holmes; secretary, Dr. Robert T. Gillmore; treasurer, Dr. Charles B. Reed, and editor, Dr. H. Bond Stowe.

Historical Society Incorporated.—The Society of Medical History of Chicago was incorporated October 21 by Drs. George H. Weaver, Nathan S. Davis, and Henry T. Byford, with the object of preserving data, curios, writings, and specimens pertaining to medical progress in the middle west. Dr. Isaac N. Danforth is president.

Personal.—Dr. Jacob Frank has been appointed consulting surgeon to Michael Reese Hospital.——Dr. Thomas J. Sullivan is reported to be seriously ill in the Post-Graduate Hospital.——Dr. Carl H. Von Klein, who has been ill for some time as the result of a cerebral hemorrhage, has almost entirely recovered.——Dr. L. Blake Baldwin, city physician, has sailed for Europe. The work of his office will be undertaken by Dr. Frank J. Griffin during Dr. Baldwin's absence.

Bequests.—By the will of the late Hon. Lambert Tree, provision is made that, after the death of the son and grandson of the deceased, one-half of the residue of the estate shall go to St. Luke's Hospital for the building of an addition to be known as the "Lambert and Anna J. Tree Addition."——By the will of the late Mrs. Mary Hunt Loomis, $25,000 is devised to St. Luke's Hospital, $10,000 to the Children's Memorial Hospital, and $10,000 to the Home for Destitute Crippled Children.——By the will of the late Ezra J. Warner, $5,000 is bequeathed to the Presbyterian Hospital of Chicago.

INDIANA

Negro Professions Meet.—The third annual session of the Indiana Association of Negro Physicians, Dentists and Pharmacists met in Indianapolis, September 27. A clinic was held at the City Hospital by Dr. Daniel H. Williams of Chicago, and addresses were delivered by Drs. Samuel E. Earp, Clarence Lucas and Calvin R. Atkins, Indianapolis; Dr. William J. Woodlin, Columbus, Ohio, and Miss Josephine Holmes, head of the Normal Department of Wylie University, Marshall, Texas. The following officers were elected: president, Dr. Henry L. Hummons, Indianapolis; vice-president, D. A. Derthea, Terra Haute; secretary-treasurer, Dr. Calvin R. Atkins, Indianapolis, and executive committee, Dr. William E. Brown, and William W. Stuart, and Ward Wilson, all of Indianapolis. Indianapolis was selected as the next meeting place.

Report of Tuberculosis Clinic.—The report of the tuberculosis clinic of the City Hospital, Indianapolis, from Jan. 1 to Sept. 1, 1910, shows the following results: Patients treated, 331; apparently cured, 4 per cent.; arrested, 5 per cent.; improved, 18 per cent.; unimproved, 16 per cent.; died, 11 per cent.; whereabouts unknown, 18 per cent.; non-tuberculous, 28 per cent. The "apparently cured" patients were those who had tuberculosis in its earliest stages, with few exceptions, and who adhered strictly to the advice and treat-

ment. Not a single patient of this kind grew worse. Of the patients, 14 per cent. were colored; 61 per cent. were married, and 13 per cent. were under 15 years old. Attention was called to the fact that 12 per cent. of all deaths in Indianapolis for the same period were from tuberculosis. Of the patients living in the Tuberculosis Colony on the City Hospital Grounds, 1 patient recovered, 33 improved, 9 did not improve, 1 died and 5 remained.

IOWA

District Medical Society Meeting.—The Second District Medical Society of Iowa held its sixth annual meeting in Davenport, October 11, and elected the following officers: president, Dr. David N. Loose, Maquoketa; vice-presidents, Drs. George E. Decker, Davenport, and George Hofstetter, Lyons, and secretary-treasurer, Dr. John V. Littig, Davenport.

MARYLAND

Personal.—Dr. Timothy Griffith has been appointed first vice-president, and Dr. Abbott R. Walker a member of the executive committee of the Board of Trade of Frostburg.——Dr. John M. B. Rogers, Ellicott City, is reported to be ill with typhoid fever at Govanstown.

Hospital Report.—The annual report of the Springfield Hospital for the Insane, Sykesville, shows a net increase of 30 males and 45 females during the year; that 43 males and 23 females died; that 37 males and 20 females were discharged recovered; 24 males and 15 females were discharged improved, and 14 males and 7 females were discharged unimproved. The total expense was $274.093. During the year 60 per cent. of the males and 40 per cent. of the females had employment. The superintendent asks for an appropriation to build an amusement hall.

Baltimore

Personal.—Dr. Robert T. Wilson has been reelected president of the Hospital Relief Association of Maryland.——Dr. Charles W. Mitchell has returned after a summer abroad.——Dr. Adolph Meyer, who is superintending the erection of the Phipps Psychiatric Clinic connected with Johns Hopkins Hospital, has settled in Baltimore.

NEW JERSEY

Isolation Hospital Offered.—Dr. John W. Wade, president of the Millville Board of Health, has offered property in West Millville to be used by the town as an isolation hospital.

Tuberculosis Items.—An open-air school has been opened in Montclair with an initial attendance of 21.——The day camp conducted by the Antituberculosis Association at Newark is to be closed November 1 on account of lack of funds.

Personal.—Dr. Ralph R. Charlesworth, Millville, was taken to the Jefferson Hospital in Philadelphia, October 2, with appendicitis.——Dr. Alice H. Ward, Newark, has been appointed a factory inspector.——Dr. Edward S. Sharpe has been appointed a member of the staff of attending physicians of the Atlantic City Hospital, vice Dr. William F. Ridgway, deceased.——Drs. Harvey Lloyd and Edward T. Kraney have resigned from the staff of Mercer Hospital, Trenton.

NEW YORK

Chiari Addresses Society.—At the semi-annual meeting of the Medical Society of the County of Albany, held in October, Prof. Hans Chiari, professor of pathologic anatomy in the University of Strassburg, delivered an address on "The Portals of Entry of the Infection of Tuberculosis in Human Beings from an Anatomic Standpoint." At the close of the lecture a reception was given Prof. Chiari at the University Club.

Sanatorium Notes.—The Medical Society of Dutchess county, at its annual session in Poughkeepsie, October 12, urged the immediate building of a tuberculosis hospital on the Pendall farm.——The Welch farm, adjoining the county farm, near Syracuse, will not be approved as a site for a tuberculosis sanatorium in Onondaga county, as the State Health Commissioner is opposed to locating a tuberculosis sanatorium near the county farm.

Personal.—Dr. Montgomery E. Leary, Rochester, has been elected superintendent of the Iola Sanatorium for the Treatment of Tuberculosis, the Monroe county institution, and Dr. John F. W. Whitbeck, president of the board.——Dr. William Kemble, Kingston, broke two ribs in an automobile accident at Dashville Falls, October 7.——Drs. Thomas Carney, Edward S. Vass, John J. Burke, and Roy C. Keigher, Schenectady, have been appointed district city physicians.——Dr. Emmott Howd has been appointed a member of the obstetric staff; Dr. Frank J. Noonan, a member of the medical staff, and Dr. Ovila Mallet, a member of the surgical staff of St. Joseph's Maternity Hospital, Troy.——Dr. George W. Mills has been promoted to second assistant physician at the Central Islip Hospital.

Changes in Faculty.—The following changes in the faculty of the College of Medicine of Syracuse University are announced: Prof. W. H. Stiles, Tulane University, New Orleans, professor of anatomy; Dr. E. H. Haskell, University of Michigan, assistant professor of anatomy; Dr. William A. Curtin, department of internal medicine, and St. Joseph's Hospital; Dr. Henry B. Doust, department of materia medica; Dr. Albert S. Hotaling, obstetrics for juniors; Dr. Eugene W. Belknap, obstetrics for seniors; Dr. Joseph R. Wiseman, department of medicine; Dr. Joseph C. Palmer, department of operative surgery; Dr. William A. Groat, laboratory work at St. Joseph's Hospital; Dean John L. Heffron, superintendent of clinical clerks and laboratory examinations, Hospital of the Good Shepherd; Dr. I. Harris Levy, assistant superintendent of clinical clerks and laboratory examinations; Dr. Frank L. Harter, sectional work for juniors; Dr. Herman G. Weiskotten, department of pathology and bacteriology, and postmortem examinations; Dr. Charles D. Post, department of medicine, and Dr. Harold G. Kline, department of laryngology to assist Dr. Thomas H. Halsted.

New York City

Infirmary Opened.—The Bayside Infirmary, Bayside, Long Island, was recently opened to receive patients, and within a week after the opening, half of the available beds were reported occupied.

Sajous in New York.—At the meeting of the Manhattan Medical Society, held October 28, Dr. C. E. de M. Sajous, Philadelphia, was the guest of the society at a reception, and later Dr. Sajous read a paper entitled "The Adrenals in General Pathogenesis."

Election.—The New York Medico-Surgical Society, at its annual meeting October 16, elected Dr. John A. Irwin, president; Dr. Daniel S. Dougherty, vice-president; Dr. Samuel McCullagh, secretary; Dr. J. Arthur Booth, treasurer, and Dr. John A. Bodine, member of the executive committee.

Dean Recommends Large Hospital.—Dr. Samuel W. Lambert, dean of the College of Physicians and Surgeons, in his annual report, suggests that a hospital building, to be used as the College of Medicine Hospital, be erected on the Morningside Heights Campus at a total cost of from six to eight million dollars.

City to Pasteurize Milk.—At a recent hearing of the budget committee on the estimate on the Department of Health it was explained that this department contemplates establishing pasteurization stations. Borough President McAneny states that the plan is approved, and that, if Mr. Straus should decide to discontinue his work, the city will take it up. They ask $50,000 additional for this purpose.

College Opens.—The Cornell University Medical College opened September 28 with a total enrollment of 127, distributed as follows: first year, 28; second year, 20; third year, 11, and fourth year, 56, and special students, 12. The decline in numbers from the fourth to the third year, marks the falling off since the A.B. degree with the full year's work in physics, chemistry, and biology is required for admission.

Would Increase Research Laboratories.— Dr. Hermann M. Biggs, general medical officer in the Department of Health, is making a vigorous fight for money for the extension of the work of the city's research laboratories. He asks for $60,000, but says that the benefit to be derived from this investment will be incalculable to the poor of the city. He wishes to establish a division of specific therapy and preventive medicine.

The Straus Milk Stations.—A mass meeting was held at Cooper Union, October 8, when resolutions commending the work done by Mr. Straus were passed and a continuation of the work was urged. Among the speakers were Dr. Abraham Jacobi and Dr. William A. Evans of Chicago. The aldermen have passed a resolution urging Nathan Straus "to continue his splendid efforts in behalf of the poor and needy in the supply of pure milk."

Anniversary Meeting at the Academy of Medicine.—At this meeting to be held on Nov. 17, the topic for consideration will be "Animal Experimentation in Medicine." Dr. William H. Welch, president of the American Medical Association, will

read a paper on "Objections to Proposals of Further Legislation to Regulate Animal Experimentation," and Dr. Walter B. Cannon, Harvard Medical School, one on "The Character of Antivivisection Literature."

Personal.—Dr. Belle J. Macdonald has returned from abroad.——Dr. Isaac S. Hirsch has been appointed roentgenologist to Bellevue Hospital.——Dr. Raymond Kelly, ambulance surgeon of Kings County Hospital, was injured by being caught between the ambulance and a trolley car, October 9.——Dr. Herbert E. Baright has been made associate physician at the Saratoga Springs Sanatorium.——Major Frederick F. Russell, Medical Corps, U. S. Army, delivered the Carpenter lecture on "The Control of Typhoid Fever in the Army by Means of Vaccination," October 20.

Tuberculosis Wards Overcrowded.—At the recent meeting of the State Board of Charities, the overcrowded condition of the tuberculosis wards at the Metropolitan Hospital on Blackwell's Island was under discussion. The charities commissioners have decided that it is necessary for the city to take immediate steps to add to the accommodations on Blackwell's Island and to complete the Sea View Hospital on Staten Island. The report presented states that of 148 rooms examined two-thirds had less than 800 cubic feet of air space per patient and only one had an air space of 1,200 feet. At night the alcoves and hallways are filled with cots and conditions are positively inhuman. The two new infirmary buildings which are soon to be opened on Blackwell's Island for tuberculosis patients can at best but temporarily relieve the congestion. It was also stated that there were hundreds of new cases awaiting attention.

The Question of Venereal Disease.—At a meeting of between forty and fifty women representing as many different organizations, held October 14, at 110 Second Avenue under the auspices of the Women's Prison Association, the following resolutions were passed, after a discussion of the cause of the Page Commission Bill dealing with the medical examination of prostitutes:

WHEREAS, The germs causing the venereal diseases are no longer matters of uncertainty, but have been perfectly and conclusively demonstrated by medical science, and

WHEREAS, The favorable breeding conditions and modes of transmission of these germs are also thoroughly understood by the medical profession, and

WHEREAS, The method of attempting to check the spread of venereal diseases by systematically hunting down certain classes of women only has survived from a period when the germs of these diseases were yet undiscovered and their modes of transmission therefore not certainly demonstrable, and

WHEREAS, A legislative mandate to continue so crude and barbarous a method of attacking any infectious or contagious disease is an offence against scientific truth and an indignity to the medical profession, an insult on women and a slur on the intelligence of the public, therefore be it

Resolved, That health boards should place the venereal diseases on the same status as all other contagious, infectious or communicable diseases; should take the same measures against them, irrespective of class or sex, as are applied in the prevention of all other contagious, infectious or communicable diseases, and should conduct in respect to them the same policy of instruction of the public as to the preventability of these diseases as is now conducted in respect to others; and be it further

Resolved, That public authorities should make ample provision for the full and sufficient free, voluntary treatment of patients suffering from venereal disease.

OHIO

Medical Women Elect.—Dr. Olive Johnston was elected president; Dr. Mary D. Crane, vice-president, and Dr. Olive Littlejohn, secretary-treasurer of the Columbus Women's Medical Club, at the annual business meeting, October 11.

Licenses Revoked.—On a rehearing ordered by the governor and attorney general, October 5, the state medical board is said to have sustained the revocation of the licenses of Drs. James M. Luburg, Dayton; Paul DeWitt Hale, Dayton, and Joseph H. Leatherman, Columbus.

Assistant Physicians' Association.—The sixteenth annual meeting of the Association of Assistant Physicians of the Ohio State Hospitals was held in Cleveland, October 5 and 6. Dr. John C. George, Dayton, was elected president; Dr. Arthur G. Hyde, Cleveland, vice-president; Dr. Dorr, Athens, secretary, and Dr. Mary K. Isham, Columbus, treasurer.

Gift to Western Reserve.—It is announced that Mr. John D. Rockefeller has recently offered to give to Western Reserve University for further endowment of its Medical Department the sum of $250,000 provided $750,000 additional is raised. Toward this $1,000,000 fund, as was announced in May last, Mr. H. M. Hanna of Cleveland has given $250,000. The trustees are planning to secure the $500,000 needed to complete the fund.

Personal.—Dr. R. Harvey Cook has succeeded his father, the late Dr. George F. Cook, as medical superintendent of Oxford Retreat, Oxford.——Dr. George W. O'Grady, Lancaster, has been appointed associate physician at the Jackson Health Resort, Danville, N. Y.——Dr. Arthur W. Bartel, Dayton, has been appointed first assistant surgeon in the Home Hospital, Hampton Roads, Va.——Dr. Edward E. Campbell, health officer of Logan, who has been seriously ill with diphtheria, is reported to be convalescent.——Dr. Frederick S. Baron, Zanesville, has returned from Europe.——Dr. James G. Shirer has succeeded Dr. William H. Knauss as health officer of Newark.——Dr. August Schumacher, Hamilton, is recovering from a serious illness.——Dr. James B. Ray has been elected city physician of Portsmouth, and Dr. Samuel P. Fetter, president of the board of health.——Dr. Clarence E. Exline, Canton, was seriously injured, October 6, in an automobile accident near his home.——Dr. Clarke D. Sackett, Ashland, sustained a fracture of the right clavicle from the recoil of a gun while hunting, October 1.——Dr. Albert J. Moorman has succeeded Dr. Pearl L. Gunckel as physician of the Dayton Workhouse.——Dr. George S. Weger, Delphos, announces his retirement from the practice of medicine.

Cincinnati

Personal.—Dr. Charles A. L. Reed has returned after a visit to the clinics of Europe.——Dr. Paul G. Wooley, professor of pathology in the Ohio-Miami Medical College, has been appointed dean of the department.——Dr. Leon G. Tedesche, bacteriologist of the Cincinnati water-works has resigned to accept a similar position with the Milk Commission of the Cincinnati Academy of Medicine.

PENNSYLVANIA

Bequest.—The will of the late Mary S. Bean, contains a bequest of $10,000, to build in or near Norristown a hospital for children suffering from contagious diseases, to be a memorial to her daughter, Emily S. Bean.

Nuns' Sanatorium Opened.—The sanatorium founded at Hyde Park, near Reading, by Rev. George Bornemann, rector of St. Paul's Catholic church was opened October 21. The sanatorium is for nuns of various orders of the church, who are afflicted with tuberculosis.

Physician Convicted.—Dr. Henry C. Lawton, Camp Hill, who has been tried on several counts, charged with a criminal operation on Mrs. Mattie Hamilton, which resulted in her death, is said to have been convicted October 6. The defendant was indicted on eight specific charges, on the seventh of which he was found guilty, namely that of performing a criminal operation by means unknown.

State Secretaries' Conference.—The fifth annual meeting of the Conference of Secretaries of Component County Societies of the Medical Society of the State of Pennsylvania was held in Pittsburg, October 4. The president, Dr. William Rowland Davies, Scranton, delivered an address on "The Year's Work," and each member was called on to give briefly a feature of the work in his particular society. Dr. John J. Coffman, Scotland, was elected chairman, and Dr. Charles E. Shaw, Williamsport, secretary-treasurer. The next meeting will be held at Harrisburg at the time of the meeting of the state society.

To Study Milk Problem.—Mayor Reyburn, at the suggestion of Dr. Joseph S. Neff, has decided to appoint a commission of five medical and technical experts to study the milk problem of the city—that is, to examine: 1. Sources of the city's milk supply, within and outside the state. 2. Condition of cattle, dairies, methods of handling milk at dairy farms and creameries, and in transit to the city. 3. Conditions prevailing in the wholesale and retail distribution within the city. 4. Scope and methods of milk inspection as now carried on by the Bureau of Health. 5. The problem of tuberculosis among cattle in the districts from which the city's milk is drawn. 6. Methods of tracing to their sources typhoid fever and other infectious diseases commonly carried by milk. Dr. Joseph S. Neff and Dr. Alexander C. Abbott spoke on this problem at a special meeting of the City Club, October 15. The subject was freely discussed and the motto established was "Cleanliness, Proper Temperature and Expeditious Transportation."

Philadelphia

Pathologic Society to Visit New York.—The members of the Pathologic Society of Philadelphia will be the guests of the New York Pathological Society at the latter's regular meeting, November 9, at the Academy of Medicine, 17 west Forty-Third Street.

New Hospital Building for University's Foreign School.—Authorization of a new hospital building to cost $16,000 was cabled by the Christian Association of the University of Pennsylvania on October 13, to Dr. J. C. McCracken, of the University Medical School in Canton, China.

New Site for Children's Hospital.—Deeds have been recorded conveying to the Children's Hospital of Philadelphia, the lot at the northeast corner of Eighteenth and Fitzwater Streets, purchased about two years ago by Eckley B. Coxe and presented to the hospital as a site for new buildings. Plans have already been prepared but there is no intention to begin immediately the erection of the building contemplated, as the funds necessary to carry out the project have not as yet been subscribed.

Children's Country Week Report.—At the semi-annual meeting of the directors of the Children's Country Week Association, held October 10, a report of the summer's work showed that 5,589 babies and their mothers have been given trips to the mountains and seashore. The total amount of money expended by the association was $16,727.21. In addition to giving outings and excursions under their direct supervision, the association distributed 18,500 tickets for the Bristol boat excursions to mothers and children who were unable to go to the country.

Changes in University Faculty.—The following changes in the University of Pennsylvania Medical Department are announced: Dr. David L. Edsall has succeeded Dr. James Tyson as professor of medicine; Dr. Edsall has been succeeded, as professor of pharmacology, by Dr. A. N. Richards; Dr. Alonzo E. Taylor of the University of California has been assigned to the new chair of physiologic chemistry; Dr. Richard M. Pearce, New York City, to the new chair of medical research; Dr. Milton B. Hartzell, to the chair of dermatology, vice Dr. Louis A. Duhring, resigned; Dr. Allen J. Smith, dean of the Medical department, has been assigned to the section on tropical medicine.

Councils Approve Health Budget.—Councils' committee has reviewed the budget of the department of health and charities for 1911. Dr. Neff outlined the improvements for which he asked $6,000,000. The improvements include $5,000,000 for the erection of hospital buildings for the insane; $500,000 for the hospital for contagious diseases; $100,000 for the alteration of the building and maintenance of a home for the indigent; $45,000 for a cold storage and ice plant; $15,000 for a tuberculosis sanatorium at Byberry and numerous smaller items. The committee gave its approval, leaving the question of financing the department to the financing committee.

Personal.—Dr. Ivan Clark of the receiving ward of the University Hospital, was removed to the Municipal Hospital October 15, suffering from diphtheria.——Dr. Thomas Stotesbury Githens has been given a fellowship in the pharmacologic department of the Rockefeller Institute for Medical Research.——Dr. Benjamin A. Thomas has been elected professor of genito-urinary surgery in the Philadelphia Polyclinic and College for Graduates in Medicine.——Dr. Allen J. Smith, dean of the medical department of the University of Pennsylvania, was given the degree of doctor of science by Pennsylvania College, Gettysburg, October 20.——Dr. Paul J. Pontius and Dr. John Jones have been appointed to the ophthalmologic department of St. Joseph's Hospital.

Veteran Physicians Honored.—Twenty-nine physicians from various parts of the state, who have been practicing for half a century or more were the guests at a reception given by the Medical Club of Philadelphia in the ball room of the Bellevue-Stratford Hotel on October 21. The following were the guests:

Stephen D. C. Bredin, '55, U. of P., East Orange, N. J.
John B. Chapin, '59, Jefferson Medical College, Philadelphia.
James E. Clawson, '55, University of Maryland, Philadelphia.
Jacob Solis-Cohen, '60, U. of P., Philadelphia.
Robert S. Dana, '57, Jefferson Medical College, Morrisville, Pa.
James Darrach, '51, U. of P., Germantown.
Emanuel K. Deemy, '60, New York University, Mechanicsburg, Pa.
Robert N. Downs, '56, U. of P., Germantown.
Edward L. Duer, '60, U. of P., Philadelphia.
William B. Erdman, '50, U. of P., Macungie, Pa.
Jonathan L. Forwood, '57, U. of P., Chester, Pa.
William M. Guilford, '52, U. of P., Lebanon, Pa.
Charles W. Houghton, '60, Pennsylvania Med. Coll., Philadelphia.
Theodore Jacobs, '60, U. of P., Norristown.
William S. Janney, '54, Pennsylvania Med. Coll., Philadelphia.
William F. Knox, '54, U. of P., McKeesport, Pa.
Benjamin Lee, '56, College of P. and S. of Cincinnati, Harrisburg.
John B. Laidly, '56, Western Reserve University, Carmichaels, Pa.
S. Weir Mitchell, '50, Jefferson Medical College, Philadelphia.
Matthew J. McKinnon, '53, University of Maryland, York, Pa.
Henry C. Paist, '54, Pennsylvania Medical College, Philadelphia.
Jonathan B. Pottinger, '54, Jefferson Medical College, Hamburg.
Peter J. Roebuck, '60, U. of P., Lititz, Pa.
Abraham Stout, '55, U. of P., Bethlehem, Pa.
Samuel R. Shillern, '54, U. of P., Philadelphia.
H. Genet Taylor, '60, U. of P., Camden, N. J.
Benjamin W. Wilson, '57, U. of P., Philadelphia.
Daniel Yoder, '58, Pennsylvania Medical College, Catasauqua, Pa.
William R. Longshore, '60, Pennsylvania Med. Coll., Hazleton, Pa.

TENNESSEE

Medical School Opens.—Vanderbilt University Medical Department opened September 22, with an address by Chancellor Kirkland.

Guilty of Mislabeling.—Dr. Samuel H. Harris, Nashville, charged with selling misbranded drugs, is said to have been found guilty as charged in the indictment. Sentence was postponed pending a motion for a new trial.

Personal.—Dr. Margaret Gilleland, Knoxville, has returned after two years abroad.——Dr. Alfred B. DeLoach, Memphis, has been elected a member of the State Board of Medical Examiners, vice Dr. Frank S. Raymond, deceased.——Dr. William G. Somerville, Memphis, has returned after fifteen months abroad.——Dr. José M. Selden, Sewanee, has located in Chattanooga.——Dr. Cary A. Snoddy has been elected superintendent of the Knoxville General Hospital.

Eastern Tennessee Physicians Meet.—The eighteenth annual meeting of the East Tennessee Medical Society was held in Bristol, September 29 and 30. The following officers were elected: president, Dr. Leon L. Sheddan, Knoxville; vice-presidents, Drs. Nathaniel F. Dulaney, Bristol, John W. Cox, Johnson City, and Henry M. Cass, Morristown; and secretary-treasurer, Dr. William M. Copenhaven, Bristol. Morristown was selected as the next place of meeting.

GENERAL NEWS

Military Surgeons to Meet in Richmond.—The Association of Military Surgeons of the United States, whose membership is made up of medical officers of the Army, Navy, Public Health and Marine-Hospital Service, and organized militia, will hold its annual meeting in Richmond, Va., November 1-4, under the presidency of Col. Joseph K. Weaver, N. G., Pa.

Death of Professor Bombarda of Lisbon.—Professor Miguel A. Bombarda, the leading psychiatrist of Portugal and the president of the International Medical Congress at Lisbon in 1906, was shot in his office by Lieut. Grinée, who had entered apparently to consult him, as at one time Grinée had been a patient in his charge. The horror at the murder is said to have been the spark that lighted the flame of the revolution which has resulted in the proclamation of the republic in Portugal.

Southern Association to Meet.—The annual meeting of the Southern Medical Association will be held in Nashville, November 8-10. Headquarters will be at the Hermitage Hotel. General sessions will be held in the auditorium of the Y. W. C. A., the section on medicine will meet in this auditorium, the section of surgery will hold its sessions in the assembly hall of the Hermitage Hotel, and the section of ophthalmology will have its meeting place on the same floor. On November 9, there will be an excursion to the Hermitage, where Dr. John A. Witherspoon will deliver an address on "The Life and Character of Andrew Jackson." In the evening a general reception will be given at the hotel.

Health of the Army.—According to the annual report of the surgeon-general of the army, the general health has shown steady improvement for several years. The constant non-effective rate of 41.48 per 1,000 during the last fiscal year, which compares favorably with the rates for the previous years, were 42.66 in 1908, 46.17 in 1907, and 49.79 in 1906. The total number of deaths from all causes was 370, of which 228 were due to disease. The admission rate for disease was 865.92 per 1,000 of mean strength; a steady improvement since 1899 when the rate was 2,125.74 per 1,000. More tuberculosis was noted than in previous years, but there was a marked decrease in the prevalence of malarial infection. The health of the troops in the Philippines is reported to improve year by year, and the records now show that insanity is no more prevalent in troops in the Islands than in troops in the United States. During the fiscal year 11,338 persons in the army were vaccinated against typhoid, and among these only three cases have occurred, with no deaths. The surgeon general therefore advocates typhoid fever vaccination as a routine procedure throughout the army.

The Alvarenga Prize.—The College of Physicians and Surgeons of Philadelphia, announces that the Alvarenga Prize for 1910 has been awarded to Dr. M. Katzenstein of Berlin, Germany, for his essay entitled "The Formation of an Arterial Collateral Circulation in the Kidney." The next award of the prize, being the income for one year of the bequest of the late Señor Alvarenga, amounting to about $180, will be made on July 14, 1911, provided that an essay deemed by the committee of award to be worthy of the prize shall have been presented. Competitive essays may be on any subject in medicine, must not have been published, must be typewritten, must be received by the secretary of the college on or before May 11, 1911; must be sent without signature but must be plainly marked with a motto and be accompanied by a sealed envelope having on the outside the motto of the paper and within the name and address of the author.

Health of the Philippine Islands.—The report of Dr. Victor G. Heiser, director of health of the Philippine Islands, calls attention to the inadequacy of the filter capacity of the water supply of Manila; announces the demonstration of the presence of hydrophobia for the first time in the history of the Islands; notes the confirmation of the theory that beriberi is caused by the continued consumption of polished rice as a staple article of diet; and reports that during early April cholera made its appearance in Pangasinan with a considerable spread in this and adjoining provinces, and the infection of Manila. An effort has been made recently by the medical officers of the Philippine Medical School and Bureau of Health to furnish better obstetric service to the indigent poor. An out-patient obstetric department has been established, to which are attached a sufficient number of physicians and two nurses. During May the average daily number of cases was 37, and the total numbered 1,147 for the month. Many rats were sent to the laboratory and bacteriologically examined, but no plague rats were found. After many delays one sanitary barrio is nearly completed on the San Lazaro estate and another is under construction, so that shortly there will be facilities for transferring from two to three thousand persons living in insanitary surroundings to properly drained land, where every house will face on a street or alley, so that sanitary carts may enter and keep the premises clean.

Meetings of Railway Surgeons.—The American Association of Railway Surgeons, at its seventh annual meeting, held in Chicago, October 19-21, elected the following officers: president, Dr. Albert R. Mitchell, Lincoln, Neb.; vice-presidents, Drs. George W. Cale, Jr., St. Louis, Oliver B. Quinn, McComb, Miss., and Ira K. Gardner, Newhampton, Iowa; secretary, Dr. Louis J. Mitchell, Chicago (reelected); and treasurer, Dr. Henry B. Jennings, Council Bluffs, Iowa.——At the meeting of the Railway Surgeons Association of the Pennsylvania Lines east of Pittsburg with that of the Pennsylvania Lines west of Pittsburg, held in Pittsburg, October 3 and 4, the following officers were elected: president, Dr. Spencer M. Free, Dubois, Pa.; vice-presidents, Drs. Hanson T. A. Lemon, Washington, D. C., and Ellwood Patrick, Westchester, Pa.; secretary, Dr. Amos W. Colcord, Clairton, Pa.; treasurer, Dr. Eugene H. James, Harrisburg, Pa.; and member of the executive committee, Dr. Joseph M. Wells, Trenton, N. J.—— The ninth annual meeting of the Association of Seaboard Air-Line Railway Surgeons was held in Birmingham, Ala., October 11 and 12. The following officers were elected: president, Dr. Jarvis G. Dean, Dawson, Ga.; vice-presidents, Drs. Hampden A. Burke, Petersburg, Va., Milton L. Wood, Montgomery, Ala., and Bartlett J. Witherspoon, Charlotte, N. C.; secretary-treasurer, Dr. Jarrett W. Palmer, Ailey, Ga., and member of the executive committee, Dr. Robert L. Harris, Jacksonville, Fla. Washington, D. C. was selected as the place of meeting for 1911.

Cholera.—The health officer of New York, on October 22, decided that beyond a doubt the case of illness and death on the steamer *Taormina*, which arrived October 21 from Genoa and Naples, was due to cholera, and the steamer has been held at quarantine for inspection.——The International Bureau of Public Hygiene, on October 21, recommended the calling of an international sanitary conference to combat the cholera epiemic.——On October 19, 37 new cases of cholera were reported in Italy, 13 of which were in Naples and 19 in Caserta. On October 21, 21 cases were reported with 11 deaths.——The surgeon-general of the Public Health and Marine-Hospital Service considers that cholera is not so threatening as in 1893. Between June 25 and October 7, there were 332,881 cases and 153,581 deaths in Russia, and the disease is believed to be increasing. Careful investigation is made at the German frontier by the government and in addition all emigrants are being held five days at the point of embarkation, and the same course is being pursued in cases of emigrants passing through England. As an additional precautionary measure, every emigrant from Russia and Italy will be followed to his destination by a report from the health officer of the port of entry to the board of health of the community to which he goes.——The North German Lloyd steamship *Breslau* was detained at Quarantine until October 15, in order to permit of the thorough examination of the steerage passengers and their baggage. Three suspects are under observation at present.——Cholera, which had almost ceased in St. Petersburg, is said to have broken out afresh in the Municipal Psychopathic Hospital, from which 33 employees have been sent to the pesthouse, and there are still suspected cases.

CANADA

New Building for Foundling Hospital.—The Montreal Foundling and Baby Hospital will erect a new building to cost $100,000. The capacity of the present building is inadequate, as 350 babies were refused admission during the last year.

Changes in Insane Hospital Staff.—Dr. William C. Herriman, assistant superintendent at the Toronto Hospital for the Insane, is to be chief medical superintendent of the hospital at Orillia, vice Dr. Alexander H. Beaton, resigned; Dr. George A. MacCallum of the Penetang Institution, has retired from the service and is succeeded by Dr. William T. Wilson of the Coburg Hospital for the Insane. Dr. Thomas J. Moher, superintendent of the Brockville Institution, replaces Dr. Wilson at Coburg. Dr. James M. Forster, assistant at London, becomes superintendent at Brockville, Dr. Harvey Clare, Mimico, becomes assistant superintendent at Toronto, and Dr. James Rollins, Orillia, is transferred to Mimico.

Personal.—Dr. Murray Maclaren, St. John, N. B., has gone to Germany.——Dr. Bert Wiley, Frederickton, N. B., has returned from Europe.——Dr. Charles Sheard, retiring medical health officer of Toronto, was presented with a gold watch by the staff of the City Health Department, October 4.—— Dr. John O. Todd, retiring president of the Winnipeg Medical Association, gave a reception at his home in honor of Dr. Samuel W. Prowse, the new president of the association, October 11.——Dr. Helen MacMurchy, one of the newly-appointed medical inspectors of the schools of Toronto, is said to have been asked to resign on account of differences with the chief inspector of schools.——Mr. George G. Nasmith, assistant in the laboratory of the Ontario Board of Health, has been appointed chief of the bacteriologic laboratory of Toronto.

Public Health Campaign.—The formation of the Canadian Public Health Association was completed at a meeting held in Ottawa, October 13. Dr. Peter H. Bryce presided, and the following officers were elected: honorary president, Sir James Grant, Ottawa; president, Dr. T. A. Starkey, Montreal; secretary, Major Lorne Drum, Ottawa, and treasurer, Dr. George D. Porter, Toronto. The Dominion government will be asked to grant increased aid to the work of the prevention of tuberculosis, and steps will be taken to secure crown lands in favorable localities for colonies for persons suffering from tuberculosis, and for their families. Efforts will also be made to establish a permanent national council of health and public health laboratories to manufacture vaccines and antitoxins and to supervise the manufacture, and sale in, and importation of these products into Canada. The proposed central council is to be composed of Dominion health officers attached to the several departments of government at Ottawa and the chief officers of the provincial departments and is to be under the supervision of the Conservation Commission.

MANILA LETTER

(From Our Regular Correspondent)

MANILA, SEPT. 9, 1910.

The Chinese Red Cross Society

The Chinese Red Cross Society, which was organized during the late war in Manchuria, has at last received the official recognition of the Chinese government. The Board of Rites in Peking has prepared an official seal of the society which has been transmitted to Shanghai and formally "opened." The Chinese Red Cross Society was organized by their excellencies Sheng Hsuan-huai (Sheng Kung-poa) and Lu Hai-huan and other Chinese officials and merchants in accordance with the rules of the Red Cross Society adopted by the Geneva Convention and the Hague Peace Conference, but for some reason it seems that the society did not receive imperial

recognition until last February, when an imperial rescript was issued through the grand council appointing H. E. Sheng president of the society and ordering the Board of Rites to prepare an official seal. The seal, which is cast in Chinese characters throughout, signifies in English: "Official Seal of the Red Cross Society of the Ta-ching Empire." A complete change in the rules has been made since the organization of the society and the institution is now put on a permanent basis. It is reported that the governments of the various powers have been informed of the formal "opening" of the official seal of the society.

Health Standards of the Philippines

An important step in maintaining the present health standard in the Philippines, and particularly in raising the standard as the Americans are striving to do, was the adoption by the Far Eastern Association of Tropical Medicine of resolutions concerning epidemic diseases, particularly those sections relating to publicity and quarantine. The islands now seem to be entirely free from plague, cholera is on the decline in Manila and in the provinces, and the lepers are being collected into a leper colony and segregated on Culion island. Added to these also is the relative scarcity of typhoid and, for a tropical country, the occurrence of very little malaria of any type. Now if the delegates present at the first annual meeting held in Manila in March and the Association as a whole can procure the support of the governments represented the outlook for excellent health conditions in the Philippine Islands will be particularly good. While greatly interested in the unity and advancement of medicine in the Orient promised by these measures, the Philippines are particularly interested in the notification (of epidemic diseases) aspects of the resolutions; for there is not a tropical country in the Orient in which at least one of these serious epidemic diseases is not more prevalent than in the Philippine Islands. Among the resolutions of the greatest local interest are the following:

Resolved, That the Far Eastern Association of Tropical Medicine, appreciating the benefit which would accrue from concerted sanitary action on the part of the eastern governments, be empowered to approach the following governments, namely: Philippine Islands, Japan, Hongkong, French Indo-China, Siam, Netherlands-India, Straits Settlements, and Ceylon, with the view, if possible, of obtaining their official support on the following lines:

To have a common standard for the term "epidemic," when making reports to or imposing quarantine against each other. The following definition is suggested for consideration: Plague, cholera, small-pox or yellow fever shall be considered to be epidemic, when, after the first telegraphic report of its occurrence, any weekly report thereafter shall show the occurrence of an average daily number of three cases.

To agree to notify each other's territories as infected only when the infectious diseases shall have assumed epidemic proportions as defined above, and automatically to withdraw such notification when the average number of cases for three successive weeks has fallen below the status epidemicus as defined above.

To circulate weekly returns of plague, cholera, smallpox and yellow fever among each other, and also a telegraphic report on the first occurrence of any of these diseases, in a clean port or territory.

To insist on a bill of health being carried by all ships leaving a country declared to be infected, which intend to proceed to the port of another signatory; such bills of health to include a return of infectious diseases for the previous 48 hours.

To report by telegram to the country concerned the departure of an infected or suspected ship (as defined by the Paris convention) which may intend to proceed to any port in the territories of another signatory; and to endorse the bill of health of the said infected or suspected ship with a full account of the measures taken to disinfect or otherwise deal with the said vessel.

With regard to plague and leprosy the following is urged:

In our opinion the only practical measure concerning plague that we can recommend is the advisability of each country represented agreeing to notify other countries of the occurrence of cases of plague within its borders, the first case by telegram and afterward by weekly returns. Leprosy is to be regarded as a dangerous communicable disease. Compulsory notification of all cases of leprosy to the authorities is essential. Compulsory segregation of all cases of leprosy is necessary, and preferably in special colonies constructed for that purpose. The entrance of all aliens afflicted with leprosy into a country must be prohibited.

The Tuberculosis Campaign

The antituberculosis movement has spread to the Orient and the Far Eastern Society of Tropical Medicine has pledged itself to "use its influence to cause the formation of a national antituberculosis society in each political entity represented in the Far Eastern Association of Tropical Medicine; these societies to be formed along the lines of existing antituberculosis societies in other parts of the world, yet revised to facilitate work under local conditions." Yet it is doubtful if such societies in most of the Oriental countries will be able to wage an effective campaign. The ignorance of the vast majority of Orientals of any form of modern medical methods, the widespread lack of absolutely any sanitary precautions, the great density of the population in most of the countries in question and the great poverty of the inhabitants would seem almost to make any campaign against tuberculosis futile.

The Library of the Bureau of Science

One of the most pleasant surprises that a medical or scientific man experiences in coming to the Philippine Islands is the finding of so complete and well-selected a library in both the medical and the general sciences. In the reorganization of the libraries of the Philippines, the scientific library of the Bureau of Science becomes a part of the general library scheme of the Philippine government. All scientific books and journals are collected together into a common scientific library, located in the Bureau of Science. Since its organization the Bureau of Science has been and still remains the center of scientific activity and research in the Philippines and naturally demands the largest scientific library. Investigation of the many local medical problems has from the first been a part of the program of the American administration in the islands. This is particularly true of the Bureau of Health and the Bureau of Science. The problem of making the country a healthful one, not only for the Filipinos, but also for Americans, has been a big one and a great deal of research along medical lines has been and is still necessary. Of course, in this work, not only are scientific men and good laboratories necessary, but also good library facilities. In this line, as well as along other scientific lines and in the field of industrial investigation, the government has shown itself liberal. To make the library funds go as far as possible, there is practically no duplication in the different branches of the general library and the various government bureaus are permitted to borrow books freely from each other.

The current scientific journals form a very important part of the library. The shelves are well supplied with a majority of the better scientific journals in all languages, from English and German to Chinese and Russian. Back numbers and sets of many of the more important journals are to be found. Every branch of medicine is represented, not only by the standard text-books, but also by the current journals. On Jan. 1, 1910, aside from the current journals, the medical section of the scientific library was represented by 5,832 bound volumes, 471 unbound volumes and 818 parts. Many additions have been made since that date and the recent library budget of the Philippine Medical School will bring up the total considerably. Works and journals on tropical medicine naturally form an important part.

LONDON LETTER

(*From Our Regular Correspondent*)

London, Oct. 15, 1910.

Town-Planning

An important conference on town-planning, organized by the Institution of Architects, has been held at the Guildhall. Mr. John Burns, president of the Local Government Board, who represented the government and who has framed an excellent act for the regulation of town building, insisted on the necessity of providing better houses and streets for the workers. The object of his act was to promote comfort in the home, dignity in the streets, space in the roads, with less of the smoke, noise, advertisements, and nuisances that accompanied a city without a plan, because its rulers were without ideas and its citizens without imagination. A picture of the ideal town of the future was sketched by Sir William Richmond. He hoped that all town-planning schemes would make gardens an important element and said that places should be arranged for fountains and bandstands. To render the air as pure and immune from smoke as possible, all grates should consume as much smoke as possible, and every encouragement should be given to the manufacturers of smokeless coal. Indeed it might be the part of the town-planning enterprise to devise, especially for the dwellings of the poor, central heating stations from which the necessary warmth might radiate. Cooking stations and cheap restaurants should also be erected for the poor and encouragement given for them to club together, a system which would promote economy and healthy food. With the smoke evil cured, gardens on the house-tops might be possible, even in our climate. At present the dirt produced by London smoke made this impossible. When the necessity for the change from dirt to cleanliness was recognized a whole row of houses of the poorer classes might possess a large area of flat roof which would be a healthy playground for children. The architect, who should

be the prime director of all town-planning, should consult the sculptor and the painter. When the smoke of towns was abated mural painting would probably come into general use.

Outbreak of Food Poisoning Due to a Bacillus-Carrier

An outbreak of food poisoning due to eating pork pies has occurred at Wrexham and resulted in the serious illness of over one hundred persons and the deaths of five. From two samples of the pies, which were all made at one factory, an organism was cultivated which was undoubtedly either the paratyphoid B bacillus or the *Bacillus enteritidis* of Gaertner. The indications generally were in favor of the former organism, which in certain circumstances is of great virulence. The several ingredients which entered into the pies were examined, but the flour, lard and gelatin did not yield the organism. No opportunity was afforded of examining the meat as originally delivered to the baker, but it was ascertained that the meat formed part of a common batch, a portion of which was made into pies by other bakers, which were largely sold and from which no ill effects could be traced. The feces of an employee in the shop in which the pies were made showed numerous colonies of an organism which by its cultural and agglutination characters was found to be identical with the organism in the pies. Professor Smith therefore concluded that the outbreak was due to this bacillus-carrier.

Plague in London

A native member of the crew of the S. S. *Oceana*, which recently arrived in London from Bombay, complaining of illness was landed at the Port Isolation Hospital at Denton for observation and found to be suffering from plague. He is isolated and the ship has been thoroughly disinfected.

Medical Education

When distributing the prizes at the Leeds Medical School Mr. Howard Marsh, professor of surgery at the University of Cambridge, dealt with the increasingly difficult problem of medical education. Medicine had now become a department of biology. It rested on chemistry, anatomy, physiology and pathology. The student had difficulty in keeping pace with his subjects and for the average man this had from the first been hopeless. He was not a sensitive photographic plate on which a short exposure would secure a clear and abiding picture. He had been outpaced. The problem was how to arrange the work so that the curriculum of the student would lead to satisfactory results. The difficulty was one of the oldest in the field of education. It was a question of selection. They had to consider the result of the present system not merely in reference to what the student had learned and would retain in a serviceable form but what kind of mental training he had been passing through, and what effect his work had on his mental evolution. Mere information was but raw material and of little value to the student unless he could manufacture it for his own use. But how could he do that when he was constantly being overfed with material which he could not assimilate? Professor Marsh found that intelligent and serious students showed an altogether deficient acquaintance with, for instance, the essentials of surgical anatomy. The rejections in anatomy and physiology at the conjoint examinations of the Colleges of Physicians and Surgeons in the last five years had been between 39 and 47 per cent. This high rate was in some degree due to the fact that the students were struggling under the incubus of an overloaded curriculum. He suggested that a medical education conference might be held. The meeting of the different teachers would emphasize the fact that the object was not the training of specialists in the individual sciences concerned but the education of students of medicine. As medicine had now become a department of biology they should appeal to specialists in other subjects for assistance. Each teacher should be absolutely independent and in every sense unfettered. Each should be able to make his teaching thorough and turn out students who had acquired not merely an evanescent smattering, but a sound and permanent grip of principles. Demonstrators of anatomy should have constant opportunities for going beyond mere tedious anatomic facts to their meaning as to function and their bearing on medicine and surgery. In the hospital wards the teaching could with advantage be remodeled. Every ward teemed with material for clinical teaching but the surgeon could not give his time to systematic teaching. For this purpose ward teachers should be appointed, as had already been done in some hospitals.

The Relation of Religion to the Falling Birth-Rate

At the Church Congress which has just been held at Cambridge the subjects discussed were not entirely theologic; papers attracted considerable attention on sociologic topics, such as heredity, social responsibility, etc., which had important medical bearings. In a paper on parentage the Bishop of Ripon deplored the lessening of the fit and the strong, and the increase of the unfit and the weak, which had been brought about by modern conditions. The shortage of children in the last twenty years was over a million. The decline was not confined to the mother country. In twenty-two years the birth-rate of New Zealand had fallen from 36 to 29 and in thirty years that of Australia from 41 to 27. The problem that had to be faced was an arrest of the birth-force in the English-speaking races and, unfortunately, this decline was greatest in the best classes of the population. An important paper on this subject was also read by Mr. C. Whetham, F.R.S., who said that all previous conclusions in sociology needed re-examination in the light of the voluntary restriction of the birth-rate which began about 1875. Since that year, the average number of children produced by a fertile union had halved in the best families of all classes of the nation. The discrepancy had become so great that no amount of care of children could compensate for the diminished number of births. That this restriction was voluntary was shown by the fact that Jews and devout Roman Catholics in all ranks of life were not affected by it, while the Protestant clergy had been much less affected than the laity. At this period of our evolution, for religion to have its biologic survival value it must have a definite message on the subject. It must teach people that for the sake of the future welfare of humanity, possibly for the ultimate welfare of eternity, large families were to be encouraged among the sound and able stocks, of high moral and intellectual worth, but that where definite hereditary unsoundness existed selfish and irresponsible procreation meant future misery for themselves and a lowering of the average quality of humanity, which was the temporary home of souls of eternal spiritual significance. The new revelation of the power of a conscious selective birth-rate to modify the average character of a nation must be acted on in fearless faith. While those nations who ignored it would suffer deterioration and decay, the race that was taught by its faith to accept and act on the new knowledge would improve, multiply and replenish the earth. It would carry its ideals through nations and its religion to the ends of the world.

PARIS LETTER

(*From Our Regular Correspondent*)

PARIS, Oct. 7, 1910.

Formation of an International Association of School Physicians

At the time of the International Congress of Educational Hygiene, held recently in Paris (THE JOURNAL, Aug. 20, 1910, p. 707), the school physicians of various countries met to consider the organization of an international association. The assembly entrusted the organization of the new association to a provisory bureau, the honorary presidents of which are Sir Lauder Brunton of London, Sir James Grant of Ottawa and Professor Chantemesse and Dr. Albert Mathieu of Paris.

The Public Emergency Service in 1909

During 1909, the first-aid stations established in Paris on the borders of the Seine and the canals have received 357 submerged persons (269 men, 88 women), of whom 9 had been too long in the water to revive; 154 had thrown themselves into the water intentionally. The stations in the suburbs received 15 submerged persons, 2 of whom died. As for first-aid to the sick and wounded, 273 persons (255 wounded and 18 sick) received attentions in the first-aid stations of Paris. The litters of the various posts were utilized 517 times—for confinement, illness, sudden death, natural death and accidents. It is interesting to observe that the ambulances installed at the time of the ceremonies and public celebrations received only 285 persons altogether. Carnival Day furnished 40 sick and 23 wounded, and the national holiday 38 sick and 23 wounded—very modest figures compared with statistics of the American Fourth of July accidents.

Injurious Results to the Eye from Tarred Roads

At the last session of the Académie des sciences, Dr. Truc, professor of clinical ophthalmology at the Montpellier college of medicine, and Dr. Fleig, read a paper on the effect of the

dust from tarred roads on the eye. It seems that while tarring roads markedly diminishes the dust raised by the passing of automobiles, the dust from roads so treated has an exceedingly harmful effect on the eyes. More than other dust, tarry dust inflames the conjunctiva and provokes the ophthalmia. Incrusted on the cornea, the particles of tar produce leukomas, which sometimes persist for a long time and sometimes are permanent. Cases of blepharitis and corneal ulcer from this cause are not rare.

Second Conference for the Study of Cancer

The first Conference for the Study of Cancer, convoked by the central German committee for the study of cancer, met at Heidelberg and Frankfort in September, 1906. A committee, consisting of delegates from thirteen different countries, was authorized by the first conference to arrange for the organization of an International Association for the Study of Cancer, to meet triennially. The opening session of the second conference was held in Paris on October 1. M. Doumergue, the minister of public instruction, presided and made the opening address. On the platform were the official delegates of the twenty-three foreign governments represented at the conference, namely, Great Britain, Germany, Austria, Belgium, Bolivia, Brazil, Bulgaria, Chili, China, Denmark, United States, Greece, Italy, Japan, Hungary, Luxemburg, Mexico, Peru, Persia, Argentina, Russia, Sweden and Turkey.

Professor Czerny, who spoke after M. Doumergue, says that according to the statistics of the last ten years, cancer is increasing and that in civilized countries especially it already holds second place among the causes of mortality among adults. The study of neighborhoods, houses and families seems to be most promising for ascertaining etiology. The work of the French committee, therefore, deserves particular commendation since it is in direct communication with practitioners. By statistics from one country of frequent cases of cancer in a single organ, for example, the stomach, the esophagus or the bladder, and by an exhaustive study of the surroundings and the circumstances in which the patients live, it may be possible to make more rapid progress than by general and universal statistics. The endemic increase of cases of cancer in certain localities and in certain houses, which was reported first in France, then in Germany and in England, speaks in favor of a parasitical cause of many cancers, although the efforts of innumerable investigators to discover this cause have so far remained unsuccessful. New experimental data lend support to the theory of irritation.

Professor Pierre Delbet of Paris closed the series of official speeches by defining the character and spirit of the meeting. "We have," he said, "called it a conference to emphasize the fact that it is a limited association. In an open congress the special aims of the meeting might perhaps have been missed among communications from which neither science nor the patients would draw much benefit." In this conference, only members of associations belonging to the International Association, invited guests and official delegates of foreign governments can participate. The conference has 150 members.

The program was intentionally limited to general questions. Unfortunately, as frequently happens, many papers came too late, so that the printed papers could not be distributed before the conference. It is also unfortunate that the papers in German were published in that language without being abstracted in French, and that the reading of these papers was not followed by such abstracts.

On motion of Professor von Hansemann of Berlin a committee composed of all the foreign delegates was appointed to devise an international nomenclature of cancer before the next meeting of the conference, three years hence. Professor Pierre Delbet spoke of the inconvenience arising from the fact that in various countries the same lesions received different names and the same words were employed in different senses. Therefore, he, with Drs. Ménétrier and Herrenschmidt nad drawn up a scheme of nomenclature, which without pretending to be complete, constituted a terminologic framework. Professor Delbet's nomenclature was endorsed as a temporary scheme.

It is probable that the next international conference on cancer will be held at Brussels in 1913, although no decision has been taken as yet.

The Benefit of Surgery in the Army

The new physical requirements for military service have had, among other good effects, that of surgically relieving many young men of more or less troublesome infirmities, such as varicocele, hemorrhoids, hernia, etc., besides improving their general physical condition during their periods of service. The number of radical cures of hernia (the most frequent surgical infirmity in the army) obtained in the course of military service, has continued to increase since 1903. In 1903, 1,886 radical cures were effected; in 1904, 2,533; in 1905, 2,868; in 1906, 2,896; in 1907, the last year for which statistics have been published, the number of these operations was 3,731. This is explained by the fact that since 1902 hernia has been only exceptionally a cause for exemption, while in 1903 the eliminations for hernia by the Council of Revision reached the enormous number of 3,116; in 1907 there were only 751.

Death of Mme. Pasteur

Mme. Pasteur died suddenly at Arbois, Jura, near where her illustrious husband was born. Her funeral, which was held on September 28, was very numerously attended. The body lay in state at the Pasteur Institute at the entry of the crypt where the mortal remains of her husband already repose. The ceremonies were conducted by the members of the council of administration of the Pasteur Institute, headed by Dr. Roux, director of the institute, and M. Metchnikoff. After the religious ceremony at the church, the body was brought to the Pasteur Institute to the crypt where it will be buried, Mme. Pasteur having expressed the desire to rest near her husband. Dr. Roux pronounced a moving discourse, in which he rendered homage to the character of the admirable woman who was the devoted companion of Pasteur.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Oct. 7, 1910.

Inexpensive Hospitals for Mild and Chronic Cases

This title was the subject of a report made by Professor Grober of Essen at the recent meeting of the German Public Health Association. Grober is director of the hospital there and he urged the erection of such hospitals first for the relief of the large and to a certain extent necessarily expensive general hospitals, in which the stay of the convalescents and those who are recognized as chronic invalids can be materially shortened, and secondly because the development of medicine demands institutional care for classes of cases which formerly were treated without it. For these patients the expensive apparatus of the large hospital is not necessary. Under the auspices of the Prussian department of education, Grober visited a large number of hospitals in Germany, Holland, Switzerland, without having so far found a type which could be regarded as a model. This is due partly to the fact that the requirements for such a hospital in various places must differ because of the varied character of the conditions. The demand is quite general that in the building and equipment, all expense not distinctly necessary must be avoided. In particular the provisions for the purely medical part can be much simpler than in institutions intended for major surgery and severe internal diseases. But it must not be forgotten that the institution must be thoroughly hygienic. In hospitals of this kind in foreign countries this is seldom the case. Medical oversight is necessary and the physician should have the deciding word in the arrangement of the institution. Whether such a hospital should be a branch of an already existing institution or separate from it depends on the special needs and the local conditions. If the house is to be especially for mild cases, it should be more like a private home. For chronic cases the public institution type is preferable. It is quite permissible to erect buildings of several stories on the corridor system. For chronic tuberculous patients suitable arrangements against infection must be provided. It would be very desirable that all the patients received should have been for a time in a general hospital and that the medical direction of both should be in one person's hands. If possible, the management should also be connected for the sake of economy. For this purpose also the patients may be employed in the work of the house. In general a bed can be provided for from $750 to $1,000 (3,000 to 4,000 marks), and the maintenance is much cheaper than in complete hospitals. The number of beds should not exceed 1,500.

Education of Girls and Race Hygiene

A short time ago the above title was the subject of a lecture by the renowned Munich hygienist, Professor von Gruber, delivered before a woman's club. This lecture has excited great interest on account of the position he takes in opposition to the modern woman's higher education movement. There is some reason to think that part of the ad-

dress delivered by the Kaiser at Königsberg, which dealt with the woman question, was based on Gruber's address. Professor Gruber is strongly opposed to the attempts of the leaders of women to train every girl to be self-supporting, and to secure the complete economic and political independence of women. In his opinion this effort will result in a destruction of the family and in sterility and will therefore affect most injuriously the strength of the nation. The passionate insistence of women on economic independence, for a trade and a career, is in Gruber's opinion, disastrous, because as a rule (with rare individual exceptions) the physical and mental power of women is insufficient for industrial and professional labor, in addition to the severe burden of bearing, nursing and bringing up their children. The condition is especially serious in the higher intellectual occupations. The conflict between the business career and the position of the woman as wife and mother, leads to prevention or the frequent miscarriage of pregnancy, to weakness and illness of the new-born infants and inability to nurse them, to neglect of the training of children, and avoidance of marriage. As evidence for his claims he cites the report on morbidity and mortality in the Leipsic local Krankenkassen, recently published, as showing the small number of confinements among saleswomen and the like, amounting annually to only 6 or 7 per thousand of the women of child-bearing age (as opposed to the average, 43) and the strikingly large number of premature births among them (28 per cent. of all deliveries as opposed to the average of 17) and for which artificial interference is undoubtedly responsible. Not only is reproduction hindered or limited by the employment of the woman, but also in consequence of economic competition, marriage and the founding of a family are distinctly impeded and in this way the increase of the population is lessened. The birth-rate in our large cities, is rapidly diminishing. The work done by women is not valuable enough, he said, to compensate for the harm which comes from the employment of women. Comparison of the accomplishments of women in science, art, technic and government with the corresponding work of men shows that there is no hope that woman will be able to equal man. The natural task of woman is to become a wife and mother, and her physical and mental nature is fitted for this task. There is no such excess of women in Germany as some claim, Gruber added, for there were in Germany Dec. 1, 1900, about 8.5 million women between 20 and 40, and 8.7 million men between 25 and 50, that is 0.2 million more men of the marriageable age than women. Woman is to be helped, he continued, not by the economic elevation of woman at the expense of man, but by the economic and social elevation of man himself. Gruber admits that for such girls as must refrain from marriage and for women who cannot marry as well as for widows, some provision must be made, but professions should be chosen which are not commonly occupied by men and which correspond to the chief employment of women, namely, motherhood, such as the care of lying-in women, infants, orphans, the sick and the poor. The profession should not close to woman the road to marriage but it should, as far as possible, furnish capability and knowledge which will be of value in the married state. The chief function of the training of girls should still be to make the girls fit for mothers of families and to that belongs, above all, the preservation and improvement of their health. This will be secured by protecting the woman's strength, especially in the years of development, by simple nutritious food, by abstinence, by activity in the house and outdoor physical exercise without overexertion, by much sleep and not much intellectual work. That the leaders of the woman movement do not agree with von Gruber's views goes without saying. Already the president of the woman's club in which the lecture was delivered, Madame Heyl, a well deserving person in many respects and the publisher of a cook book which is very extensively used in Germany, has protested against Gruber's demands. In her opinion a thorough education of woman so as to secure later capability of action, intellectual clearness, strong character and thorough ability assures the better bringing up of the next generation. The existing social conditions require the cooperation of women. In addition to the occupation as mother, which takes only twenty years of the life of a woman, there remains still a long period for a self-supporting career which every girl should strive for. Similar protests from other women will not be lacking.

Ernst von Leyden

Professor von Leyden died October 5, at the age of 78. For many years his mental and physical strength has been diminishing and it was therefore for the good of the first medical clinic which he conducted when he regretfully decided to resign. Still, with his physical elasticity he would have passed many years in the midst of medical Berlin had he not over two years ago suffered an accident which proved the beginning of a somewhat rapidly progressing illness. The great importance of Leyden as an investigator and teacher is so well known that a few lines will suffice here to show the general character of his achievements. He wrote a pioneer work on diseases of the spinal cord. In various departments of internal medicine he has done very valuable work, especially on diseases of the kidneys and still more particularly, on nephritis in pregnancy. He proved that endocarditis could be produced by the gonococcus, found Charcot's crystals in asthma, wrote an illuminating work on pyopneumothorax, etc. His efforts for the establishment of tuberculosis sanatoriums, which he may be said to have inaugurated in Germany and Austria, are well known. In this his most striking characteristics appear in their best light. He had an indefatigable capacity for work, an inexhaustible fertility in ideas, a remarkable talent for organization, and great shrewdness and energy in overcoming the difficulties which stood in his way; and he was filled with an unconquerable optimism which gave him firm faith in the realization of his plans and the greatest perseverance in pursuing his fixed purpose. To reach his goal he tried all means, for to him success justified everything. He was an opportunist in both a good and a bad sense. This peculiarity appeared even in his scientific work. It was not simply accident that at his clinic alleged discoveries were made, not only by his pupils but by himself, which soon were found to be erroneous; indeed, it must be admitted that the readiness of some of his pupils to fly off at a tangent was merely the natural result of his opportunism. The confident announcement by his assistant Scheurlen of the discovery of the cancer bacillus, which was soon identified as a potato bacillus, will be recalled; and of late years the investigations of P. Jakob on the cure of tuberculosis ended in the complete discrediting of this assistant. The alleged discovery of a cancer parasite by Leyden himself may be attributed to the advanced age at which he undertook the investigation; but the tenacity with which he held to his view in spite of all adverse criticism is characteristic of his optimism. Leyden, on account of his brilliant personal qualities, played a great rôle from the beginning, not only in the medical affairs of Berlin, but also in those of Germany and in the general society of Berlin. The recognition which was accorded him gave him great pleasure; this peculiarity indeed amounted sometimes to weakness. Nevertheless he knew how to win over, by his lovable disposition and shrewdness, those who disapproved of his fondness for distinction, which amounted sometimes to childishness. So up to the time of his resignation he enjoyed an undisputed leadership in many societies, particularly in those founded by himself, like the Verein für innere Medizin and the Kongress für innere Medizin. Wherever he appeared he always was the central point of interest and as such was able to unite about himself opposing interests. Leyden's striking personality will live not only in the history of medicine but in that of many organizations.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Oct. 6, 1910.

Death of Professor Chrobak

One of the best-known gynecologic surgeons of Vienna, or in fact of Europe, Rudolph Chrobak, has died recently, after a prolonged illness, and his death will be a grief to many eminent surgeons all over the world. He was born in 1870, became a physician in 1887, and succeeded Breisky in 1889. Chrobak took up the study of diseases of women at a time when there was no place to learn it, and therefore he regarded it as most important, in building smaller hospitals, to provide special beds for gynecologic purposes, claiming them from the "all-round surgeons" for the gynecologist proper. He became the director of the first gynecologic and obstetric clinic in Vienna, but resigned his post two years ago. His best known pupils were Rosthorn (his immediate successor) and Wertheim (the second successor), of cancer fame.

Chrobak had also a prominent part in the organization of the curriculum of medical students, where he emphasized the necessity of adequate instruction in diseases of women, as well as the thorough teaching of midwives. One of his tasks was the work connected with the new clinics for gynecology, which he supervised very earnestly. He knew he would not

be master there himself, but he did the work for his successor and favorite pupil.

Chrobak was well known as the originator of the method of hysterectomy named after him. His sympathy for his patients was best illustrated by his motto, "primum non nocere." This he had inscribed in all his wards and operating theaters, and it was really one of his proudest boasts that all patients knew, when they came to his service, that they could rely on getting the best of all possible help. He was recognized by the British as one of the ablest surgeons of his time.

Chrobak's books deal mostly with the histology and pathology of gynecologic conditions, while the immense amount of obstetric work done in his clinic (6,000 cases per year) gave him an enormous experience on that subject too, so that his private practice was extraordinarily successful. He was an able teacher, beloved as an examiner and an excellent consultant.

The Work of the Rettungsgesellschaft in 1910

The "first-aid" corps of Vienna, a private institution for all cases requiring instant help, has just published its report for the last month. It had 2,977 casualties attended by its officers, of which 1,039 had to be brought to hospital. The nature of the work is evident by the following figures: 850 sudden attacks of illness, 1,096 injuries and accidents, 69 suicides, attempted and successful, 9 cases of acute mania, 28 persons found dead. Since the existence of the institution, 241,996 cases were attended to (29 years). The institution is a private one, being supported by voluntary contributions and gifts, but the funds are already large enough to give it a material independence. This was evinced some time ago, when a yearly subvention was offered by the municipality, on the condition that the administrative board would admit members of the town council. Political reasons were clear in that offer; the Rettungsgesellschaft promptly declined the grant, saying that "charitable institutions cannot bear to be meddled with by politicians." This act has greatly increased the sympathies of the population for the institution.

The Eighth International Congress of Physiologists in Vienna

September 27-30, there was held in Vienna the eighth International Congress on Physiology, which was frequented by scientists from all parts of the world. The proceedings were very interesting, many papers being read in German, English, French and Italian. As usual social festivities, banquets and receptions interfered somewhat with earnest work. It was much remarked that so many men are working on the electrocardiogram, showing that this modern method of examination is still full of puzzles and problems. Electricity played altogether a great rôle in the proceedings. Thus electric thermopenetration in the treatment of rheumatoid disease was discussed by Docent Ullman. The phenomena of electric discharges of the fish known as the *Torpedo marmorata* were made the subject of a paper by Professors Kreidl of Vienna and Kinoshito of Japan. The electric organ of the fish is exhausted in 30 minutes by involuntary discharges, if the animal is placed in common river-water or well-water. The process is interrupted at once by cocain or chloral hydrate, while, if the fish gets a dose of strychnin, the organ is discharged rapidly also in sea-water, the usual habitat. The electric condition within the cells and the electric irritability of the various organs of the human and other bodies were also discussed. An important part of the proceedings was taken up by the papers dealing with glycosuria. Boruttau of Berlin, Reach of Vienna and many other scientists gave the result of their experiments with the pancreas and heart muscles of the mammalia. Anaphylaxis was the subject of papers by Kraus, Biedl, Paltauf, while Professor Starling of London also contributed a valuable paper in that section. The papers on chemistry of colloids (Bayliss), of imbibition (Hoffmann), of peristalsis (Pal), were very interesting. Trendelenburg reported his experiments on temporary exclusion of parts of the brain or other sections of the nervous system by lowering its temperature to nearly freezing point. Dr. Dubois of Paris discussed the problem of sleep. He asserts that the anterior brain does not possess the function with which it is credited in this respect. A demonstration of artificially male rats by Steinach of Prague was much commented on. Steinach had removed the sexual organs from young female rats and had implanted testicles of rats into their anterior abdominal walls, thus changing the sex of the animals permanently. The rats grew to become normal masculine individuals, proving the effect and influence of the inner secretion of the sexual glands. Naturally the ultramicroscope of Siedentopf, in combination with kinetographic plans of living bacteria, was much discussed. Physiologic blood conditions of birds were examined by Stübel of Jena, who has found that the pulse-rate and blood-pressure of birds are much higher than in mammals of the same weight. Metabolism in high altitudes was shown by Wendt of Helsingfors, who concludes that medium heights favor the increase of hemoglobin and erythrocytes; higher levels, however, also cause an increase of muscles. The plankton cells of the ocean, which form the food of the vast majority of the inhabitants of the seas, were examined by Hensen, who asserts that the laws of Darwin do not hold good for these simple organisms. The opening and the closing address, by Richet of Paris and Ebner of Vienna, were, as is the rule now, of a general nature, except that Ebner took the opportunity to celebrate the centenary of the birth of Schwann, the discoverer of the cellular nature of the higher organisms.

The next congress will take place in two years in Groningen, Holland. Many members of the congress were present at the unveiling of a monument in honor of Gregor Mendel, the priest who discovered the laws of heredity named after him, in Brunn, a city three hours from Vienna, where he was born and died. The occasion was celebrated by the municipality, and numerous official representatives of various countries and corporations took part in the proceedings.

Professional Services to Medical Men

The question of fees among professional brethren has been discussed recently by several medical councils in this country. The Moravian Medical Council, representing about 1,500 practitioners in the northern districts of Austria, has passed a resolution that it shall not be considered unethical for a practitioner to accept a fee for medical services to the family of a brother practitioner, or even to the doctor himself. The doctor is, of course, free to grant his confrère patient a reduction of 50 to 75 per cent. of the ordinary fee. The grounds for the resolution are that very often the physician and his family are worse off in case of illness than any other patient, for since the physician sent for will not accept a fee, the patient does not want to accept an unnecessary favor. Therefore cases of disease in a practitioner's family often lack the adequate and early attention which they would have received had an outside physician been called in. On the other hand, it is only just that the services of specialists, called or consulted by physicians with whom they have no other connection, should be paid for. Physicians who are on friendly terms with each other may, however, recognize services rendered by useful presents. A suggestion by another medical council, that the fee paid by one medical man to another should be devoted to a fund, a providential or other charitable institution, does not meet the requirement that the work should receive its own reward. It has been observed that, while the older generation of doctors was against the acceptance of such fees by a physician, the younger generation favors it. It is intended to settle the question by obtaining the opinion of the profession on the point within a short time.

A Convention of Deaf-Mutes

A convention of deaf-mutes was recently held in this city under the auspices of the ministry of education. As the chief points of the discussion centered around economic and social complaints, medical interest in the proceedings was limited to the fact that deaf-mutes could successfully adopt this method of communication. The proceedings were remarkable for the absence of voice, as nearly all speakers used a combination of the French (finger) method with the German (oral) method. It must be remembered that the oral method has been in use here only for about fifteen years, and that the persons educated after this method are perhaps not yet grown up enough to take part in a congress. At any rate about 300 deaf-mutes, representing all sorts and conditions of men—business men, engineers, clerks, laborers, painters and housekeepers—had gathered, proving that although severely hampered in their progress, they still could become useful members of the community. An attempt was made to obtain reliable data in regard to the cause and duration of the condition among those present, but the exact results are not yet obtainable. One outcome of the convention was the adoption of a resolution that, if possible, both methods of conversation should be taught with due preference to the oral method. An acrobatic entertainment, at which all performances were given by deaf-mutes, was also interesting, as it proved that in spite of severe pathologic changes in the cochlea (most likely also in the vestibulum) equilibrium need not be interfered with.

Marriages

MARCUS E. WILSON, M.D., to Miss Agnes Schneider, both of Cincinnati, October 11.

ALFRED KARSTED, M.D., to Miss Annie O'Donnell, both of Butte, Mont., October 7.

GARLAND DIX SCOTT, M.D., Chicago, to Miss Hester Crowder of Sullivan, Ind., September 13.

PIERRE NORBERT BERGERON, M.D., to Miss Margaret O'Brien, both of Philadelphia, October 18.

PAUL F. COLE, M.D., Steffenville, Mo., to Miss Nora M. Yancey of LaBelle, Mo., October 12.

GREGORY JOSEPH EGAN, M.D., to Miss Freda Kathryn Michel, both of LaCrosse, Wis., October 12.

JOHN RUTHERFORD HERRICK, M.D., New York City, to Mrs. Constance Braine French, October 12.

JOHN BEVERLY POLLARD, M.D., U. S. Navy, to Miss Alice May Albaugh, at Baltimore, October 14.

HUGH A. BEAM, M.D., Afton, Iowa, to Miss Mayme Jones of Rolfe, Iowa, at Des Moines, October 10.

JAMES F. CHURCHILL, M.D., Chicago, to Miss Virginia Busey of Urbana, Ill., at Champaign, October 8.

BEDFORD F. COOP, M.D., Greenville, Ill., to Miss Ethel Reed of Highland, Ill., at East St. Louis, October 4.

SAMUEL WILLIAM HAMMOND, M.D., Norfolk, Va., to Mrs. Elizabeth M. Crockett, at Baltimore, October 10.

RUSSELL ANDREW ROBERTS, M.D., and ANNA KREMER MASTERSON, M.D., both of Kansas City, Kan., October 5.

LEE COLLINS HARLAN, M.D., Madison, Ill., to Miss Margaret Groves of Bunker Hill, Ill., in St. Louis, October 12.

CHARLES AUGUSTUS KATHERMAN, M.D., Sioux City, Iowa, to Miss Helen Louise MacKern of Chicago, October 12.

BRICKERTON L. PHILLIPS, M.D., Frederick's Hall, Va., to Miss Vera Mildred Harris of Louisa county, Va., October 13.

BENJAMIN H. B. HUBBARD, M.D., White Stone, Va., to Miss Lloyd Estelle Betts Smith, at Heathsville, Va., October 11.

CHARLES O. BAKER, M.D., Fort Madison, Iowa, to Mrs. Henrietta Emick of Cedar Rapids, Iowa, at St. Joseph, Mich., October 5.

Deaths

Carl Svantè Nicanor Hallberg, one of the leaders of American pharmacy, pharmaceutical publicist, editor, and teacher, died at his home in Chicago, October 22, after a long illness, aged 54.

Professor Hallberg was born in Helsingborg, Sweden, and graduated from the Philadelphia College of Pharmacy in 1876; he was a member of the Committee on the Revision of the National Formulary in 1886, 1895, and 1906; and a member of the National Committee on the revision of the United States Pharmacopeia from 1890 to 1910. He was professor of pharmacy in the Chicago College of Pharmacy from 1890 to 1910, and professor of pharmacology in the Illinois Medical College from 1894 to 1896. From 1883 to 1903, he was editor of the *Western Druggist*, and since 1906 has been editor of the *Bulletin of the American Pharmaceutical Association*. He was given the degree of M.D. *honoris causa* by Harvey Medical College, Chicago, in 1903, and that of doctor of pharmacy by the Medicol-Chirurgical College of Philadelphia in 1909. He was a member of the American Medical Association and secretary of the Section on Pharmacology and Therapeutics from 1901 to 1909. In great measure to Professor Hallberg's exertions was due the founding of the Council on Pharmacy and Chemistry, of which he was a member from the time of its organization in 1905, and its secretary for one year thereafter.

Charles H. Fisher, M.D. University of Nashville, Tenn., 1864; a member of the Medical Society of the State of Pennsylvania, and a charter and honorary member of the Lackawanna County Medical Society; a medical cadet, acting assistant surgeon, U. S. Army, and surgeon Ninety-Sixth Regiment, United States colored troops, during the Civil War; one of the founders of the Lackawanna Hospital, Scranton, and first surgeon to the institution; a member of the staff of the West Side Hospital, Scranton; died at his home in that city, October 17, from heart disease, aged 73.

Levi Ives Shoemaker, M.D. University of Pennsylvania, Philadelphia, 1886; a member of the American Medical Association, and American Academy of Medicine; a member of the attending staff of the Wilkes-Barre Hospital, and the consulting staff of Mercy Hospital, Wilkes-Barre; physician to the home for Friendless Children and the Humane Society; local surgeon for the Pennsylvania Railroad and Central Railroad of New Jersey; died in Germany, Sept. 27, 1909, from heart disease, aged 50.

Paul Louis Brick, M.D. College of Physicians and Surgeons, Chicago, 1890; for thirty-five years a practitioner of LeMars, Iowa; a member of the American Medical Association; local surgeon for the Illinois Central Railroad; president of the local board of pension examining surgeons; a member of the State Commission on Insanity; died in St. Joseph's Hospital, Sioux City, October 14, from heart disease, aged 64.

Joseph Lucius Gray, M.D. Northwestern University Medical School, Chicago, 1885; a member of the American Medical Association; formerly of Chicago, and assistant physician of Cook County; for several years health officer of LaPorte, Ind., and coroner and physician of LaPorte County; died in the Holy Family Hospital, LaPorte, October 21, from meningitis following otitis media, aged 50.

William Duffield Bell, M.D. Bellevue Hospital Medical College, New York City, 1888; major and surgeon of the Seventy-First New York Infantry, U. S. V., during the Spanish-American War with service in Cuba; died in the J. Hood Wright Memorial Hospital, New York City, September 28, from acute gastritis, aged 47.

Herbert O. Smith, M.D. Hahnemann Medical College, Chicago, 1881; formerly a member of the American Medical Association; United States pension examiner at Shakopee, Minn.; for several years health officer and a member of the board of education; died at his home, October 4, from cerebral hemorrhage, aged 52.

Frank W. Simmons (license, Texas, years of practice, 1907); for more than 40 years a practitioner of Hackberry, Texas; a charter member of Karnes County Medical Society; for one term a representative to the legislature, and mayor of Yoakum; died recently at the home of his daughter, near Runge, aged 80.

Richard B. Potter, M.D. Medical College of Ohio, Cincinnati, 1866; a member of the American Medical Association; local surgeon at West Palm Beach, Fla., for the East Coast Railway; sanitary inspector of the port of Palm Beach, and local agent of the State Board of Health; died in July, 1909, aged 65.

John Alexander Farnsworth, M.D. University of Colorado, Boulder, 1897; a member of the American Medical Association; at one time president of the Colorado State Medical Society, and twice mayor of Littleton; died at his home in Fort Morgan, October 12, from organic heart disease, aged 40.

John L. Neagle, a surgeon in the Confederate service during the Civil War; comptroller of South Carolina from 1868 to 1872, and thereafter for several years an employee of the Pension Bureau, Washington, D. C.; died at his home in Seattle, Wash., October 19, 1909, from heart disease, aged 72.

David R. Greenlee, M.D. University of Pennsylvania, Philadelphia, 1867; a veteran of the Civil War; for several years surgeon at the Minnesota Soldiers' Home, Minneapolis, and a member of the local pension examining board; died suddenly in that city, October 10, from heart disease, aged 78.

Homer Alvin Smith, M.D. New York University, New York City, 1877; of Bondsville, Mass.; hospital steward in the Navy during the Civil War; formerly a member of the school board of Palmer, Mass.; died at the home of his brother in Stafford Springs, Conn., October 10, from uremia, aged 65.

August Berg, M.D. University of Berlin, Germany; for many years a practitioner of St. Louis; died at the home of his daughter in Collinsville, Ill., September 18, from the effects of a gunshot wound of the head, believed to have been self-inflicted with suicidal intent, aged 74.

William Frederick Holthausen, M.D. College of Physicians and Surgeons, New York City, 1904; a member of the Medical Society of the State of New York; of Brooklyn; was instantly killed in a collision between interurban trains near Tipton, Ind., September 24, aged 29.

Benjamin Franklin Whiteside, M.D. University of Maryland, Baltimore, 1877; of Hickory, N. C.; a member of the American Medical Association; died in the Whitehead-Stokes Sanitarium, Salisbury, N. C., October 2, from septicemia due to a carbuncle of the neck, aged 58.

Louis Auerbach, M.D. University Medical College of Kansas City, Mo., 1882; a member of the Colorado State Medical

Society, and since 1878 a practitioner of Denver; died in St. Luke's Hospital in that city, October 14, two days after an operation for nephritis, aged 58.

George F. Wilson, M.D. University of Alabama, Mobile, 1889; formerly a member of the American Medical Association; a member of the Louisiana State Medical Society; of Bienville; died at the Shumpert Sanitarium, Shreveport, after a surgical operation, October 4.

Richard N. Beauchamp, M.D. New York University, New York City, 1850; a member of the Kentucky legislature in 1890 and 1891; first president of the Logan County Medical Association; died at his home near Russellville, October 10, from senile debility, aged 87.

Isaac Wood, M.D., Queen's University, Kingston, Ont., 1892; successively lecturer on chemistry, assistant professor of obstetrics and gynecology, and professor of pediatrics in his alma mater; died at his home in Kingston, September 1, from cerebral hemorrhage, aged 57.

Luis Abella y Ocampa, M.D. University of St. Tomas, Manila, P. I., 1892; an efficient member of the staff of the Bureau of Health of Manila since the establishment of the United States Government in the Philippine Islands in 1898; died July 12, from heart disease.

Leon Ray Pheasant, M.D. State University of Iowa, Iowa City, 1902; a member of the American Medical Association; was instantly killed in an automobile accident, while making a professional call six miles from his home in Pierce, Neb., October 4, aged 31.

Samuel William Fletcher, M.D. Harvard Medical School, 1858; a member of the Massachusetts Medical Society; surgeon of the Thirty-second Massachusetts Volunteer Infantry throughout the Civil War; died at his home in Pepperell, April 13, aged 77.

Edna D. Timms, M.D. University of Oregon, Portland, 1899; a member of the American Medical Association; of Portland, Ore.; aged 41; while making an emergency call, October 14, was instantly killed in a collision between her automobile and a street car.

Howard Warden Taylor, M.D. Hahnemann Medical College, Philadelphia, 1899; of Pittsburg; anesthetist to the Homeopathic Hospital; died in that institution October 12, from gunshot wounds, self-inflicted, it is believed with suicidal intent, aged 38.

William H. Riley, M.D. Tulane University, New Orleans, 1861; surgeon in the Confederate service during the Civil War; a member of the first board of fire commissioners, of Algiers, New Orleans; died at his home in that place September 30, aged 72.

Andrew Strang, M.D. College of Physicians and Surgeons, Baltimore, 1880; formerly of Wilkes-Barre and Scranton, Pa.; died in Largs, Scotland, September 10, from epithelioma of the tongue for which operation had been performed a year before, aged 64.

George Edward Miller, M.D. College of Physicians and Surgeons, Chicago, 1905; a member of the American Medical Association; health officer of Sanborn, Iowa; was instantly killed, October 17, in an automobile collision near Struble, aged 37.

George Howard Jones, M.D. Harvard Medical School, 1864; of Brookline, Mass.; assistant surgeon of the Fifth Massachusetts Volunteer Infantry during the Civil War; died in Harrison, Maine, September 15, from valvular heart disease, aged 67.

James H. Donovan, M.D. Louisville Medical College, 1891; a member of the Kansas Medical Society; United States pension examiner at Medicine Lodge; died in Lakeside Hospital, Chicago, August 29, after a surgical operation, aged 46.

Henrik S. Schanche, M.D. University of Christiania, Norway, 1903; a member of the North Dakota State Medical Association; formerly of Park River, N. D.; died at his home in Minot, N. D., June 1, from spinal meningitis, aged 34.

Elera John Abbott, M.D. Chicago Homeopathic Medical College, 1887; of Chicago; a specialist on diseases of the eye, ear, nose and throat; died in Hahnemann Hospital, October 16, from peritonitis, following a surgical operation, aged 51.

Clarence Morfit, formerly a practitioner of Baltimore; an officer in the Confederate service during the Civil War; and later an employee of the Philadelphia mint; died at his home in New York City, May 22, from senile debility, aged 82.

Cyrus Barklay White, M.D. Eclectic Medical Institute, Cincinnati, 1878; a member of the Medical Association of Georgia; a director of the First National Bank of Fitzgerald; died at his home in Fitzgerald, September 29, aged 71.

Chauncey Ely Billington, M.D. Bellevue Hospital Medical College, 1875; for one term coroner of Onondaga county, N. Y.; and a well-known physician of Syracuse; died at his home, October 3, from typhoid fever, aged 62.

Clarence F. Tillman, M.D. College of Physicians and Surgeons, San Francisco, 1903; formerly of Goldfield, Nev., but recently of San Francisco; died at St. Luke's Hospital in that city, September 25, from appendicitis, aged 32.

Frederick J. Bauer, M.D. University of Wooster, Cleveland, Ohio, 1880; of Mogadore; a member of the Ohio State Medical Association; died suddenly, October 5, at the home of a neighbor, from arteriosclerosis, aged 56.

Mary Augusta Stackeral Counsell, M.D. Sioux City (Iowa) College of Medicine, 1905; a member of the Iowa State Medical Society; died at her home in Sioux City, from acute nephritis, and was buried September 23, aged 42.

Orris Kingsbury Griffith, M.D. Eclectic Medical Institute, Cincinnati, 1861; a pioneer practitioner of Huntley, Ill.; president of the village board, and school and township trustee; died at his home September 24, aged 74.

David A. Robertson, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1882; a pioneer practitioner of Williams, Iowa; a veteran of the Civil War; died at his home, September 29, from chronic cystitis, aged 70.

William E. King (examination, Texas, 1907); for twenty-five years a practitioner of Collin County, Texas; died at his home in Oak Cliff, Dallas, September 14, from septicemia, due to a carbuncle on the neck, aged 56.

John Puckett Wolfe, M.D. Ohio Medical University, Columbus, 1899; died at his home in Johnstown, Ohio, October 11, from the effects of cannabis indica, self-administered, it is believed, with suicidal intent, aged 36.

Charles Fletcher Bush, M.D. Vanderbilt University, Nashville, 1902; state inspector of cotton mills, jails and almshouses of Alabama; died at his home in Montgomery, September 24, from tuberculosis, aged 32.

John Turner Mullin, M.D. Victoria College, Coburg, Ont., 1857; for many years medical health officer, and councilor, and for one term mayor of Brampton, Ont.; died at his home in that place, August 14, aged 78.

Louis Plette Walley, M.D. Hahnemann Medical College, Philadelphia, 1883; a member of the Medical Society of the State of Pennsylvania; died at his home in Mifflintown, in April, from tuberculosis, aged 49.

Andrew E. Thompson, M.D. Michigan College of Medicine and Surgery, Detroit, 1905; a member of the Saginaw Valley Medical Society; died at his home in Elkton, Mich., October 9, from pneumonia, aged 31.

Joseph Fletcher, M.D. Washington University, St. Louis, 1867; formerly a member of the American Medical Association; died at his home near Mendon, Ill., September 26, from paralysis agitans, aged 76.

James Henry Heavrin, M.D. Kentucky School of Medicine, Louisville, 1885; chairman of the board of health of Hancock County, Ky.; died at his home in Hawesville, October 1, from chronic gastritis, aged 48.

George Marshall, M.D. Medical College of Ohio, Cincinnati, 1878; formerly a member of the American Medical Association; died at his home in Columbus, Ohio, September 14, from paralysis, aged 64.

Peter L. Opsvig, M.D. University of California, San Francisco, 1900; of Everett, Wash.; a member of the American Medical Association; died in San Diego, Cal., March 11, from tuberculosis, aged 42.

Henry Levi Bevans, M.D. Washington University, Baltimore, 1869; a member of Garrett County Medical Society; died at his home in Grantsville, Md., September 27, from paralysis, aged 66.

George Steurnagel, M.D. Michigan College of Medicine, Detroit, 1883; formerly a member of the American Medical Association; died at his home in Chicago, October 9, from paresis, aged 57.

Harlan Page Reynolds, M.D. New York University, New York City, 1869; a member of the Canadian Medical Association; was burned to death at his home in Lepreaux, N. B., October 8, aged 70.

Frederick W. Smith, M.D. New York Homeopathic Medical College, New York City, 1877; of New London, Conn.; died

at the home of his sister in Niantic, Conn., September 24, aged 69.

Jesse Franklin Jones, M.D. University of Nashville, Tenn., 1874; a member of the Medical Association of Georgia; mayor of Hogansville; died at his home, October 3, from pneumonia, aged 55.

James Anderson, M.D. Miami Medical College, Cincinnati, 1869; a member of the Indiana State Medical Association; died at his home in Versailles, June 11, from acute gastritis, aged 62.

Ellis A. Merkley, M.D. McGill University, Montreal, 1897; a member of the American Medical Association; died at his home in Gouverneur, N. Y., October 2, from anemia, aged 49.

Rufus Elisha Belding, M.D. Homeopathic Medical College of Pennsylvania, Philadelphia, 1866; formerly of Troy, N. Y.; died at his home in Keuka Park, N. Y., September 21, aged 69.

W. D. Snoddy, M.D. Physio-Medical College, Cincinnati, 1850; of Warrensburg, Mo.; died at the home of his son in that city, September 30, from angina pectoris, aged 88.

James B. Wolford, M.D. Kentucky School of Medicine, Louisville 1889; a member of the Kentucky State Medical Association; died at his home in Montpelier, June 23, aged 53.

William Henry Pollard, M.D. Washington University, St. Louis, 1856; a member of the Pike County Medical Society; died at his home in Eolia, Mo., September 14, aged 76.

William A. Empey, M.D. Queen's University, Kingston, 1891; of Vars, Ont.; was shot and killed by a patient, August 18, while making a professional call in that village.

Isaac J. Hawkes, for more than forty years a practitioner of Henrico County, Va.; died at his home in East Richmond, September 8, from pneumonia, aged 79.

John M. Evans, M.D. Tulane University, New Orleans, 1889; of Corpus Christi; a member of the State Medical Association of Texas; died in Denver, October 5, aged 34.

Allen Perry Poaps, M.D. McGill University, Montreal, 1879; formerly of San Francisco; was found dead near his office in Oakland, May 14, from apoplexy, aged 50.

Cornelius Henrichs (license, Neb.); for many years a practitioner of Henderson; died at his home in that place, August 3, from cerebral hemorrhage, aged 70.

Edward S. Coburn, M.D. New York Homeopathic Medical College, New York City, 1864; died at his home in Troy, N. Y., October 4, from diabetes, aged 69.

Benjamin Franklin Dismant, M.D. University of Pennsylvania, Philadelphia, 1867; died at his home in Limerick, Pa., October 10, from paralysis, aged 65.

Peter Schwind (license, Iowa, 1889); for 46 years a practioner of medicine; died at his home in La Mars, October 2, from diabetic gangrene, aged 72.

Marcus F. Rodgers (license, Mississippi); a Confederate veteran; died at his home in New Albany, Dec. 17, 1909, from hemoglobinuric fever, aged 58.

Jacob T. Miles, M.D. Cincinnati College of Medicine and Surgery, 1874; died at his home in Bryant, Ind., July 23, 1909, from dropsy, aged 64.

Frank Ferrell, M.D. New Orleans School of Medicine, 1859; during the Civil War; died at his home in Ashland, Miss., September 13, aged 79.

John Albert Jones, M.D. Tulane University, New Orleans, 1873; of Springfield, Ill.; died recently from mental disease, at New Orleans, aged 62.

D. Thomas Robertson, M.D. McGill University, Montreal, 1857; died at his home in Lennoxville, P. Q., September 7, from uremia, aged 74.

William W. Sanders, M.D. University of Maryland, Baltimore, 1861; died at his home in La Plata, Md., October 6, from cancer, aged 74.

John Hewetson, M.D. McGill University, Montreal, 1891; of Riverside, Cal., died in Victoria, B. C., September 26, from tuberculosis, aged 43.

Frederick Emerson Chandler, M.D. Tufts College Medical School, Boston, 1896; died at his home in Everett, Mass., June 23, aged 51.

Andrew Jackson O'Bannon, M.D. Eclectic Medical Institute, Cincinnati, 1876; died recently at his home in Elizaville, Ky., aged 69.

Carlos C. Sherman, M.D. Hahnemann Medical College, Chicago, 1884; died at his home in Colton, Cal., October 7, aged 64.

Samuel K. Poling, M.D. Eclectic Medical Institute, Cincinnati, 1876; died at his home in Bryant, Ind., July 12, 1909, aged 68.

Alfred J. Lopez, M.D. Howard University, Washington, D. C., 1894; of New Orleans; died in that city, January 11.

Philip B. Rooks, M.D. Nashville; died at his home in Troup, Texas, Dec. 21, 1909, from typhoid fever, aged 78.

Correspondence

List of Drugs for State Board Examinations

To the Editor:—We have noted with interest and pleasure the publication (THE JOURNAL, Oct. 8, 1910, p. 1302) of the list of drugs recommended for state board examinations. While we consider this list a good one, and hope to see it adopted by the various state boards, we wish to submit to you a list that might be interesting for various reasons. In the first place, it is of interest because of priority both in its conception and in its adoption. It was devised by the Committee on Pharmacology of the Chicago Medical Society in the winter of 1908, and has since been adopted by the Illinois State Board of Health to serve as a guide in the elaboration of its examination questions in materia medica and therapeutics. Secondly, it is of interest because of the similarity of the two lists, compiled originally by two entirely different bodies. These lists have later been compared and certain minor changes have been made in both in consequence. Thirdly, the therapeutic classification shows the reason for the choice of the agents included in the list, the aim having been to choose at least one typical member of each therapeutic group. Certain useful agents, such as syrup and glycerin, have been omitted because a fair knowledge of their nature is common to all intelligent persons, and because they are not likely to form subjects of examination questions.

We believe that the publication of this list not only will not antagonize the success of the list previously published, but will actually reinforce it by showing how generally has been felt the need for it, and that at least one state board of health has seen fit to adopt such a list.

The list of drugs as presented to the Council of the Chicago Medical Society is given below.

WALTER S. HAINES
BERNARD FANTUS, Chicago.

LIST OF DRUGS

Circulatory Stimulant: Digitalis.
Preparations: Infusion, tincture, extract.
Circulatory Depressants: Aconite.
Preparations: Tincture, aconitin.
Cerebral Stimulant: Caffein.
Cerebral Depressant: Alcohol.
Cord Stimulant: Nux vomica.
Preparations: Tincture, extract, strychnin sulphate.
Cord Depressant: Bromids of potassium and sodium, and dilute hydrobromic acid.
Vasoconstrictor: Epinephrin.
Vasodilators: Amyl nitrite and nitroglycerin.
Alteratives: Mercury.
Preparations: Gray powder, blue mass, ointment, both chlorids, both iodids, yellow oxid, white precipitate.
Iodin.
Preparations: Tincture, comp. solution, potassium iodid, dilute hydriodic acid, iodoform.
Arsenic.
Preparations: All the official preparations.
Antiperiodic: Cinchona.
Preparations: Comp. tincture, quinin sulphate and hydrochlorid.
Anesthetic (general): Ether.
Anesthetic (local): Cocain hydrochlorid.
Antispasmodic: Camphor.
Preparations: Spirit, liniment.
Narcotic: Opium.
Preparations: Powdered, extract, Dover's powder, tincture, paregoric, morphin sulphate, codein sulphate, apomorphin hydrochlorid.
Hypnotic: Chloral.
Analgesic: Acetphenetidin.
Oxytocic: Ergot.
Preparations: Fluidextract and extract.
Anthelmintics: Aspidium, santonin, thymol.
Germicide: Phenol.
Emetic: Ipecac.
Preparations: Syrup, fluidextract.
Laxative: Rhamnus purshiana.
Preparations: Extract, fluidextract, aromatic fluidextract.

Simple Purgative: Aloes.
Preparations: Aloin, purified aloes.
Drastic Cathartic: Croton oil.
Hydragogue Cathartic: Magnesium sulphate.
Cholagogue: Resin of podophyllum.
Expectorant: Ammonium chlorid.
Diuretic: Potassium acetate.
Diaphoretic: Pilocarpin hydrochlorid.
Mydriatic: Belladonna.
Preparations: Extract, fluidextract, tincture, atropin sulphate.
Miotic: Physostigmin sulphate.
Astringents, Mineral: Zinc sulphate and oxid.
Astringent, Vegetable: Tannic acid.
Rubefacient: Turpentine.
Vesicant: Cantharides.
Escharotic: Silver nitrate.
Hematinic: Iron.
Preparations: Reduced, mass and pill of carbonate, tincture of the chlorid, Basham's mixture, pyrophosphate, syrup of iodid, ferric hydroxid with magnesia.
Antirheumatic: Salicylic acid, sodium salicylate, phenol salicylate (salol), oil of wintergreen, salicin.
Antiseptic, Urinary: Hexamethylenamin.
Antiseptic, Intestinal: Bismuth subnitrate and subcarbonate.
Antiparasitic: Sulphur.
Disinfectant: Formaldehyd.
Antacid: Sodium bicarbonate.
Acid: Hydrochloric acid.
Miscellaneous: Colchicum.
Preparations: Fluidextract, extract, colchicin.
Diphtheria antitoxin.
Vaccine virus.
Thyroid.
Of toxicologic importance: Hydrocyanic acid, phosphorus, lead, carbon monoxid.

WALTER S. HAINES, Chairman,
BERNARD FANTUS,
C. S. N. HALLBERG,
GEORGE F. BUTLER,
JUNIUS C. HOAG,

Committee on Pharmacology of the Chicago Medical Society.

Iodids in Goiter

To the Editor:—I read with some interest your answer to the question of the correspondent regarding "Simple Goiter and Its Treatment," published in THE JOURNAL, October 8, p. 1306.

I was somewhat surprised that your answer contained a recommendation for the use of iodids in the treatment of simple goiter. Many years ago, I followed out this treatment to some extent without seeing any benefit from it, but I have seen several cases, in both my own and outside practice, in which I believe the iodids converted the simple goiter into exophthalmic goiter. One of these cases, which I saw two years ago, gave such positive evidence of this, that the attending physician who had administered iodids to the patient was convinced of this influence. Strange as it may seem, in the same issue of THE JOURNAL, p. 1329, in an abstract from the *Archiv für klinische Chirurgie*, Kocher is reported as believing that extensive iodid treatment is responsible for the development of exophthalmic goiter in more cases than is generally recognized, stating that this iodin-Basedow, as he calls it, is a frequent form of exophthalmic goiter. He describes a case in which the thyroid was over 160 grams in weight and contained a small part of a gram of iodid. The patient had a simple goiter for nearly seven years and applied local inunction of a mixture containing iodid. In four weeks she lost 16 pounds; then typical exophthalmic syndromes developed.

For the past eight or ten years I have refrained from the use of iodid or thyroid extract in all cases of simple goiter, fearing the influence toward the more serious disease. Under the use of many different kinds of treatment other than iodid in simple goiter I have known of favorable results, but only a few, and also without any treatment at all. The gland will sometimes decrease in size, and again increase independently of any treatment.

W. O. BRIDGES, M.D., Omaha.

[COMMENT: Our correspondent's caution as to the use of the iodids, even in undoubted simple goiter, is pertinent and valuable. It should be carefully determined whether a condition of hypothyroidism or hyperthyroidism exists before iodids or thyroid are administered. But a reading of the question and answer referred to above will show that we did not "recommend" iodids, our statement being: "It seems to be the opinion of many authors that iodids are the best agents for the condition," etc. We simply attempted to give an enumeration of different approved agents and methods used, without recommending any. We fear our correspondent did not carefully read the article by Kocher to which he refers, as it is said therein that all goiters should be removed which do not yield in a few weeks to careful treatment with iodid in small doses. It will thus be seen that Kocher himself suggests the use of iodids. It is no doubt true, however, that the continued use of the iodids in considerable dosage in any form of goiter would not be advisable, as seems to be proved by the experience of Dr. Bridges and others.—ED.]

Embryologic Specimens Desired

To the Editor:—I wish again to request through THE JOURNAL that physicians send me embryologic specimens which are constantly falling into their hands. The collection of such specimens at the Johns Hopkins is now one of the best in existence, has been studied carefully by the staff, and is being used constantly by anatomists at home and abroad. About 100 published studies on human embryology are based on this collection, including the "Manual of Human Embryology," in two volumes, published recently by the J. B. Lippincott Co.

Much more material than is now at hand is needed by investigators to further the science of human embryology, as well as to study with greater care the diseases of the ovum and the cause of abortion. To be of most value, the material should be preserved immediately after the abortion in a 10 per cent. dilution of liquor formaldehydi, or by more refined methods, if they are at hand. Small specimens should not be dissected, but preserved entire in formaldehyd solution. Of very great value are good histories of the cases, for through them we may discover the cause of abortions, and ultimately their cure. Studies of this kind enable embryologists to be of use to physicians in active practice. Specimens should be packed in bottles filled *completely* with the preserving fluid, and not wrapped in cotton. If there are no air spaces in the bottle, no amount of shaking will injure the most delicate embryo. Small specimens may be sent by mail, while larger ones should be sent by express, charges collect, addressed to me.

F. P. MALL, Johns Hopkins Medical School, Baltimore.

The Scientific Name of the Spotted-Fever Tick

To the Editor:—In many of the publications on the spotted or Rocky Mountain fever, the tick is referred to as *Dermacentor occidentalis*. This, I believe, is due to an identification of Dr. Stiles, following Neumann, who included it under that species. It is not *Dermacentor occidentalis*. Dr. Stiles, in a paper on this disease in 1905, mentions in two places the name *Dermacentor andersoni;* he furnishes no figure and not a word of description, so that the name cannot, according to the rules of zoologic nomenclature, hold from that date. On June 6, 1908, a revision of the classification of the ticks of the United States was published by me in a bulletin of the Department of Agriculture. In this I described the spotted fever tick as *Dermacentor venustus n. sp.* On July 3, 1908, Dr. Stiles, in a report of the Public Health and Marine-Hospital Service, gave some notes on this species, using the name *D. andersoni*, and mentioning some points in which it differed from other ticks.

According to the rules of zoologic nomenclature, the first name given (provided it is described or figured) is the proper name to use for an animal. The name *Dermacentor venustus*, Banks, antedates the name *D. andersoni* by a month. Dr. Stiles, in a recent bulletin (No. 62) of the Public Health and Marine-Hospital Service, has tried to resurrect his name *D. andersoni* by giving to the first (1905) mention of the name the value of a published description, contrary to the custom of zoologists. Moreover, he has misapplied my species, *D. venustus*, which was a manuscript name of the late Dr. George Marx, by attaching it to a form that I did not study, although

the type of my *D. venustus* was easily accessible to him (or to anyone) at any time had he chosen to see it.

The recent article of Dr. Stiles will doubtless be seen by many medical men; therefore, I deem it best to call attention in a medical journal to this gross violation of the rules of nomenclature through which he calls the spotted-fever tick *D. andersoni*. The scientific name of this tick is *Dermacentor venustus*, Banks; *D. andersoni*, Stiles, is a pure synonym of it.

NATHAN BANKS.

Washington, D. C.

Interstate Reciprocity in Licensing Physicians

To the Editor:—The letter by Dr. Dunlop in THE JOURNAL, October 15, p. 1397, is of interest to every old practitioner. The ideals for which state boards were created were made by the physicians themselves, but it seems that the moment people create an ideal and secure a law to fulfil that ideal, some state board official will invariably try to interpret it as if he were the law itself. Recent experience with one state board seems to indicate that it is trying to make it just as hard as it can for the older practitioner and just as easy as it can for the new graduate. Reasonable educational standards and ten years of reputable practice ought to entitle any one to receive a reciprocal license in any state.

DANIEL S. HAGER, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

LIABILITY FOR ATTENDANCE ON A RELATIVE

To the Editor:—Some time ago I was called by the patient's sister to a case of typhoid fever. The patient, who was delirious and in no condition to judge for himself, had been brought by his sister to her home. The course of the disease was severe, with relapse; the patient was delirious for several weeks, and this sister suggested that I should call in counsel from a neighboring town, which I did. Can this other doctor and I hold the sister legally liable for the bills for attendance on the patient, medicine, etc.? The patient's father paid the nurse's bill. S. P.

ANSWER:—It is generally understood that to call a physician for one who needs attendance merely evinces a desire to prevent suffering, and does not necessarily imply liability to pay, unless the relationship is such that this liability naturally follows. For example (we quote from 22 American and English Encyclopedia of Law, 790): "To entitle a physician to maintain an action against a person to recover for professional services rendered a third person, he must show a promise by the defendant, either expressed or implied, to pay therefor . . . When a person requests a physician to perform services for a patient, the law does not raise an implied promise to pay the reasonable value of the services so rendered, unless the relation of the person making the request to the patient is such as raises the legal obligation on his part to call in a physician and pay for his services. Whether or not the implied liability is created must depend largely on the circumstances of the particular case."

The courts have gone even further than this in denying the liability; for example, in the case of Holmes vs. McKim (syllabus), 109 Iowa 245, we read: "One is not under any implied obligation to pay for the services of a physician called to attend a minor living with his family and supported by him, but not otherwise related to him, though he acquiesced in the attendance and had on a former occasion paid the same doctor for attending the same minor, the physician knowing, however, the true relation of defendant and said child."

TYPHOID AND THE WATER SUPPLY OF MONTREAL

To the Editor:—1. What is the source of the drinking water supply of Montreal?

2. To what is the typhoid in that city attributed?

3. What is being done to better conditions there and with what success? T. W. CURRY, Streator, Ill.

ANSWER.—1. The water supply of Montreal is derived from the St. Lawrence River and receives practically no storage before it goes to the consumer.

2. During the fall and winter of 1909-1910 an unusually severe outbreak of typhoid fever was attributed to the water supply by an investigating committee composed of Drs. Adami, Armstrong, Ruttan, Strakey, Bernier, Guerin, Hervieux and Lachapelle, representing the medical faculties of McGill and Laval universities. The committee found overwhelming evidence that "the chief cause of the disease is the water supply of the city and its suburbs." The report also contains the following statements: "The exhaustive investigations into the conditions of the water supply of the city indicate that while the water may give favorable analyses for some months of the year, none of them is at all times safe. At certain times of the year the waters are actually bad and capable of giving rise to water-borne diseases. We do not consider that any further analyses or examination of the waters are necessary to establish the above conclusions. It follows, then, that the future water supply of the city, whether it consists of unmixed St. Lawrence water from south of Nun's Island or not, must be purified by a thorough system of filtration before distribution to the public. To ensure the proper working of the plant, constant supervision of the filtered water by an expert water analyst, devoting his entire time to the work, is an essential part of such a system."

3. Calcium hypochlorite was employed as a temporary means of improvement of the quality of the supply (see *Engineering News*, April 9, 1910). The municipal board of control has been granted $15,000 to make studies for a filtration system.

CAUSE OF THE MENSTRUAL FLOW

To the Editor:—What is the latest theory as to the cause of the menstrual flow? W. H.

ANSWER.—According to the latest views, the menstrual flow is due to a congestion of the uterine mucous membrane which occurs under the influence of ovulation. Previous to the flow, the mucous membrane is thickened and it is believed by some authors that most of the membrane is thrown off and the blood escapes from the denuded surface mixed with pieces of the membrane. According to others, no material destruction of the membrane occurs, but the blood escapes by small capillary hemorrhages. It is believed that the ovaries influence the uterus by an internal secretion which is absorbed by the blood or lymph, and on reaching the uterine tissues serves to stimulate the mucous membrane to a more active growth.

WHY DOES THE GASTRIC JUICE NOT DIGEST THE STOMACH?

To the Editor:—What prevents the gastric juice from digesting the stomach during life? W. P. H.

ANSWER.—Several theories have been suggested to explain the fact that the mucous membrane of the stomach is not digested by the gastric juice during life. One is that the acid is neutralized by the alkaline blood, so that the digestive agent has no effect; another is that the mucous membrane contains some substance capable of inhibiting the digestive action of pepsin; a third and more plausible theory is that the stomach is protected by the layer of mucus which covers its surface and prevents the access of the gastric juice which has been secreted.

WANTED: BOOKS ON THE GENITAL ORGANS FOR THE LAITY

A correspondent asks for a good book covering the female generative organs anatomically, physiologically and pathologically, treating also of child-birth, written in language easily understood by a layman. He desires to give copies to some of his young women patients.

We shall be glad to hear from our readers concerning any works that may be recommended for the purpose.

THE DRINKING OF SEWAGE BY COWS

To the Editor:—1. If a cow drinks fluid containing diphtheria, typhoid and other pathogenic germs from an open sewer or ditch in which the current flows at the rate of 60 feet a minute, can such germs be found in the milk and in consequence be a source of danger to those partaking of the milk?

2. Is an open sewer such as I have described a source of danger to a community, the contents not in any way contaminating either the food or water supply of said community?

A. I. LAWBAUGH, Calumet, Mich.

ANSWER.—1. When typical typhoid bacilli are fed to cattle in considerable numbers they do not appear in the feces, much less in the milk. Diphtheria bacilli also would probably be destroyed in

the alimentary tract. In regard to tubercle bacilli, as is well known, the matter is somewhat different. It is certainly conceivable that cattle might acquire tuberculosis from the ingestion of sewage.

2. An open sewer of the sort described is not without dangerous features. The precise degree of danger from flies, chance contamination, etc., is a matter about which opinions may vary in the absence of exact information. The danger ordinarily would not be considered great.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Oct. 22, 1910.

Eastman, William R., captain, on expiration of his present sick leave of absence, will proceed to New York City for duty as attending surgeon.

Richards, Robert L., captain, relieved from duty in New York City, on expiration of his leave of absence, and ordered to the General Hospital, San Francisco, for duty.

Rich, Edwin W., captain, on arrival in the United States will proceed to Ft. Mason, Cal., for duty and will report to the Commanding General, Department of California, for duty as attending surgeon, San Francisco.

Sweazey, Verge E., captain, ordered to his home to await retirement.

Blanchard, Robert M., captain, ordered to Ft. Thomas, Ky., for temporary duty during the absence of Major W. M. Roberts, Medical Corps.

Murray, Wilson, first lieut., M.R.C., granted leave of absence for two months, about Nov. 4, 1910.

Nichols, Henry J., captain, will proceed to Newark, N. J., in time to lecture on Pellagra, before the Essex County Medical Society, about Nov. 22, 1910, and on completion of this duty return to his station.

Lambie, John S., Jr., captain, granted leave of absence to include Jan. 3, 1911.

Tasker, Arthur N., lieutenant, M.C., on being relieved as surgeon of the *Sheridan*, ordered to the Presidio of San Francisco for duty.

Kellogg, Preston S., first lieut., R.C., ordered to Ft. Yellowstone, Wyo., for duty.

Walker, Thomas C., first lieut., R.C., on expiration of leave heretofore granted him, will proceed to Ft. Terry, N. Y., for duty.

Weston, Henry R., first lieut., R.C., ordered to Ft. Strong, Mass., for duty.

Hogan, David D., first lieut., R.C., on abandonment of Ft. Schuyler, N. Y., will proceed to San Francisco and take the first available transport to the Philippines for duty.

Williams, Allie W., captain, M.C., ordered to New York City for temporary duty as attending surgeon.

Clark, John A., captain, M.C., ordered to Ft. H. S. Wright, N. Y., for duty during the absence of Captain Williams.

Hanson, Louis H., captain, M.C., granted ten days' leave of absence to take effect on his relief from duty at Hot Springs, Ark.

Maus, L. M., colonel, Medical Corps; Persons, E. R., major, Medical Corps; Allen, J. H., major, Medical Corps, detailed to represent the Medical Department of the Army at the meeting of the Association of Military Surgeons, at Richmond, Va., Nov. 1 to 4, 1910.

Woodall, W. P., captain, M.C.; Whitcomb, C. C., captain, M.C.; Crabtree, G. H., captain, M.C.; Davidson, W. T., captain, M.C.; Smith, H. M., captain, M.C.; Bartlett, C. J., captain, M.C., ordered to report on Dec. 5, 1910, to Lieut. Col. H. P. Birmingham, Medical Corps, president of the Examining Board, at the Army Medical Museum Building, Washington, D. C., for examination to determine their fitness for promotion.

Krebs, L. L., captain, Medical Corps; Howell, Park, captain, Medical Corps, ordered to report on Dec. 5, 1910, to Lieut. Col. J. D. Glennan, Medical Corps, president Examining Board, at San Francisco, for examination to determine their fitness for promotion.

Medical Corps, U. S. Navy

Changes during the week ended Oct. 22, 1910.

Sheehan, R. F., Kress, C. C., and O'Malley, J. J., commissioned asst.-surgeons from Oct. 5, 1910.

Iden, J. H., surgeon, detached from duty at the Naval Hospital, Annapolis, Md., and ordered to the *Georgia*.

Ames, H. E., medical director, detached from command of the Naval Hospital, Puget Sound, Wash., and ordered to the naval training station, San Francisco.

Norton, O. D., medical inspector, ordered to duty on board the *California* as fleet surgeon of the Pacific Fleet.

McCullough, F. E., surgeon, detached from the naval training station, San Francisco, and ordered to the *Georgia*.

Stuart, D. D. V., Jr., asst.-surgeon, ordered to the Naval Medical School, Washington, D. C., for instruction.

Lawrence, H. F., asst.-surgeon, ordered to duty at the Naval Hospital, Las Animas, Colo.

Norton, O. D., medical inspector, detached from the *California* and ordered to the *West Virginia* as fleet surgeon of the Pacific Fleet.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Oct. 12, 1910.

Wickes, H. W., surgeon, directed to proceed to New Orleans (quarantine) on special temporary duty.

Lumsden, L. L., passed asst.-surgeon, directed to proceed to Huntsville, Ala., on special temporary duty.

McClintic, T. B., passed asst.-surgeon, granted 14 days' leave of absence from Oct. 5, 1910.

McLaughlin, A. J., passed asst.-surgeon, directed to proceed to Chicago on special temporary duty.

Francis, Edward, passed asst.-surgeon, granted 30 days' leave of absence from Oct. 3, 1910.

Rucker, W. C., passed asst.-surgeon, directed to proceed to Baltimore on special temporary duty.

Spratt, R. D., passed asst.-surgeon, granted 4 days' leave of absence from Sept. 28, 1910, on account of sickness.

Alford, Nell, acting asst.-surgeon, granted 30 days' extension of leave of absence from Aug. 29, 1910, on account of sickness and 14 days' annual leave from Sept. 28, 1910.

Barclay, James, acting asst.-surgeon, granted 13 days' leave of absence from Oct. 10, 1910.

Bingham, E. O., acting asst.-surgeon, granted 15 days' leave of absence from Oct. 15, 1910.

Goldthwaite, Henry, acting asst.-surgeon, granted 7 days' leave of absence from Oct. 6, 1910.

Board of medical officers convened to meet at Stapleton, N. Y., Oct. 18, 1910, for the purpose of making a physical examination of a cadet of the U. S. Revenue-Cutter Service. Detail for the board: Surgeon H. W. Austin, chairman; Passed Asst.-Surgeon W. A. Korn, recorder.

Changes for the seven days ended Oct. 19, 1910.

Gassaway, James M., surgeon, granted 1 month's leave of absence from Oct. 7, 1910, on account of sickness.

Sprague, E. K., surgeon, granted 15 days' leave of absence from Oct. 28, 1910.

Mathewson, H. S., passed asst.-surgeon, granted 1 day's leave of absence Oct. 12, 1910, under paragraph 189, Service Regulations.

Goldberger, Joseph, passed asst.-surgeon, granted 4 days' leave of absence from Oct. 26, 1910.

McLaughlin, A. J., passed asst.-surgeon, directed to report at the Bureau on special temporary duty.

Boggess, J. S., passed asst.-surgeon, granted 1 month's leave of absence from Nov. 14, 1910.

Rucker, W. C., passed asst.-surgeon, directed to proceed to New York on special temporary duty.

De Valin, Hugh, passed asst.-surgeon, granted 30 days' leave of absence from Nov. 2, 1910.

Duffy, B. J., asst.-surgeon, relieved from duty at Buffalo, N. Y., and directed to proceed to Tompkinsville, N. Y., and report to the commanding officer of the Revenue Cutter *Seneca* for duty.

Jackson, James M., Jr., acting asst.-surgeon, granted 30 days' leave of absence from Nov. 1, 1910.

Tappan, J. W., acting asst.-surgeon, leave of absence for 20 days from Oct. 1, 1910, amended to read 20 days from Oct. 5, 1910.

Terry, M. C., acting asst.-surgeon, granted 30 days' leave of absence from Nov. 1, 1910.

Board of medical officers convened to meet at the Bureau, Oct. 20, 1910, for the purpose of conducting a physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Asst.-Surgeon-General J. D. Long, chairman; Asst.-Surgeon Paul Preble, recorder.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

THE PUBLIC'S ATTITUDE IN MEDICAL FRAUDS

Evidence of the increasing understanding of medical matters by the press is found in an editorial in a recent number of the Fresno (Cal.) *Republican* which is worth quoting in its entirety:

"CAN'T DO IT"

"The directors of the San Francisco Medical Association, aroused by the Eva Swan malpractice case, have instructed their secretary to take steps toward the prosecution of the numerous alleged 'doctors' practicing in San Francisco who are known to have no licenses, nor any qualifications on which to procure them. These men are of course all frauds, and are on the fraud-order list of the United States postal department, but they are also in large part engaged in actual criminal practice, and the recent publicity given to these practices is the motive of the effort against them.

"It is a laudable effort, but we doubt its success. There is plenty of law against practicing medicine without a license, but there is very little sentiment, in or out of courts, to enforce it. Judges, lawyers, jurymen and laymen alike share the medieval superstition that medicine is some kind of magic, of which there are various sects and schools, as there are of religion; that there is no such thing in medicine as truth or falsehood, knowledge or ignorance, but only some kind of a mysterious knowledge what drug or treatment will 'cure' each of the recognized diseases. Every quack has 'cured' a lot of cases, and can prove it. Every legitimate practitioner has found a lot of cases which he could not 'cure,' and it can be proved against him. Plenty of people have been 'cured'

by the incantations of Indian medicine men, and by the more modern and refined forms of the same treatment. These facts of course are nothing to the point, but nearly every judge, lawyer and juror thinks they are. Also, nearly all the juries have the notion that a medical association is some kind of a labor union, and that its only objection to unlicensed practitioners is that they are 'scabs.' And, while in the trades which they can understand their sympathy is all with the union man against the scab, in the trade of medicine it is the other way. You see, the relation of the public to the physician is that of employer, and the unreasoning employer always prefers non-union labor.

"So, for all these foolish and ignorant reasons, the law against unlicensed healing is unpopular, and therefore unenforceable. It is particularly so because in this one case the judge and the lawyers are usually quite as ignorant as the most ideal juror a typical panel can show."

The editor of the *Republican* aptly summarizes the weaknesses of restrictive medical legislation when he says that "judges, lawyers, jurymen and laymen alike share the medieval superstition that medicine is some kind of magic of which there are various sects or schools as there are in religion." Until the public, including the bench and the bar, is sufficiently intelligent to see that there is no more possibility of "schools" in modern medicine than there is in modern chemistry or engineering, it will be impossible to secure a sane, rational interpretation and administration of medical police regulations such as is given to similar regulations in other lines. "Schools" of medicine are and ever have been the curse of the medical profession. There is danger of their also becoming a menace to the public.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Third Month—Third Weekly Meeting

INFECTIONS OF THE KIDNEY

VARIETIES: Pyelonephritis, pyonephrosis, pyelitis, abscess of kidney.

ETIOLOGY: Infection may be (1) hematogenous, descending, from pneumonia, typhoid, puerperal sepsis, etc.; (2) ascending, from inflammation or ulceration of ureter or bladder; (3) direct extension from adjacent viscera, liver, spleen, appendix, etc. Micro-organisms usually found.

SYMPTOMS: Hematogenous: General, history of preceding infection, chills, fever, prostration, pain. Examination of urine. Terminations. Ascending: History of lesion of bladder or ureter. Pain. General symptoms. Examination of urine. Terminations.

TREATMENT: Medicinal and general. Surgical, removal of primary lesion, and treatment of kidney. Indications for nephrotomy, for nephrectomy.

TUBERCULOSIS OF THE KIDNEY

ETIOLOGY: Frequency, age, sex, calculus, nephritis.

PATHOLOGY: Routes of infection. Primary and secondary. Miliary and caseous forms. Associated lesions in genito-urinary tract. Effect of mixed infection. Involvement of second kidney.

SYMPTOMS: Insidious onset. Irritable bladder, polyuria, colic, pyuria, hematuria. Examination of urine. General symptoms. Physical examination.

DIAGNOSIS: Early, dysuria, acid pyuria and occasional hematuria with absence of bladder and ureteral lesions; later, changes in bladder.

Differentiate from calculus, pyelonephritis, tumors, essential hematuria.

INFLAMMATION OF PARANEPHRIC TISSUES

FORMS: Fibrosclerotic, lipomatous, suppurative. Pathologic changes in each.

SYMPTOMS AND DIAGNOSIS.

State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, November 8-9. Sec., Dr. F. T. Murphy, Brinkley; Homeopathic, Little Rock, November 11. Sec., Dr. P. C. Williams, Texarkana; Eclectic, Little Rock, November 8-9. Sec., Dr. G. A. Hinton, Hot Springs.

CONNECTICUT: Regular, City Hall, New Haven, November 8-9. Sec., Dr. Charles A. Tuttle; Homeopathic, Grace Hospital, New Haven, November 8. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, Hotel Garde, New Haven, November 8. Sec., Dr. Thomas S. Hodge, 19 Main St., Torrington.

FLORIDA: Palatka, November 9-10. Sec., Dr. J. D. Fernandez, Jacksonville.

LOUISIANA: Homeopathic, New Orleans, November 7. Sec., Dr. John T. Crebbin, 1207 Maison Blanche Building.

MAINE: City Council Rooms, Portland, November 8-9. Sec., Dr. Frank W. Searle, 806 Congress Street.

MASSACHUSETTS: State House, Boston, November 8-9. Sec., Dr. Edwin B. Harvey.

NEBRASKA: State Capitol, Lincoln, November 9-10. Sec., Dr. E. Arthur Carr, 141 S. Twelfth Street.

NEVADA: Carson City, November 7-9. Sec., Dr. S. L. Lee.

TEXAS: Palestine, November 22-24. Sec., Dr. R. H. McLeod.

WEST VIRGINIA: Morgantown, November 14-16. Sec., Dr. H. A. Barbee, Point Pleasant.

Illinois April, May, and June Reports

Dr. J. A. Egan, Secretary of the Illinois State Board of Health, reports the written examinations held at Chicago, April 14-16, and June 9-11, and at East St. Louis, May 10-12, 1910. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75.

At the examination held in Chicago, April 14-16, the total number of candidates examined was 125 of whom 107 passed, 17 failed and one took an incomplete examination. The following colleges were represented:

College	Year Grad.	Total No. Examined.
PASSED		
Howard University, Washington, D. C.	(1909)	1
Bennett Medical College	(1910)	3
Chicago College of Medicine and Surgery	(1910)	35
Coll. of Med. and Surgery, Chicago	(1909) (4, 1910)	5
Hahnemann Med. College and Hospital, Chicago	(1909)	1
Hering Medical College	(1910)	1
Illinois Medical College	(1910)	2
Northwestern University Medical School	(1899) (1909) (7,1910)	9
College of Phys. and Surg., Chicago	(1910)	18
Reliance Medical College	(1910)	1
Rush Medical College	(1892) (1909) (19, 1910)	21
Louisville Medical College	(1894)	1
Baltimore Medical College	(1906)	1
Detroit College of Medicine	(1896) (1901)	2
St. Louis University	(1909)	1
University of Missouri	(1908)	1
Univ. and Bellevue Hospital Med. College	(1903)	1
University of Pennsylvania	(1901)	1
Medical College of Virginia	(1907)	1
Royal College of Physicians, Ireland (1886), and Royal College of Surgeons, Edinburgh	(1889)	1
FAILED		
University of Arkansas	(1909)	1
Bennett Medical College	(1909)	1
Chicago Coll. of Medicine and Surgery	(1908)	1
Coll. of Med. and Surgery, Chicago	(2, 1908) (1909)	3
College of Phys. and Surg., Chicago	(1910)	3
Northwestern University Medical School	(1909)	1
Reliance Medical College	(1909)	1
Sioux City College of Medicine	(1906)	1
Hospital College of Medicine, Louisville	(1904)	1
St. Louis Coll. of Phys. and Surg.	(1906) (1908)	2
Meharry Medical College	(1907) (1909)	2

At the examination held in East St. Louis, May 10-12, the total number of candidates examined was 116, of whom 100 passed and 13 failed. Two candidates did not complete the examination and one withdrew. The following colleges were represented.

College	Year Grad.	Total No. Examined.
PASSED		
Denver and Gross College of Medicine	(1909)	1
Chicago College of Medicine and Surgery	(1909)	1
Northwestern University Medical School	(1909)	1
Rush Medical College	(1908)	1
Barnes Medical College	(1910)	17
St. Louis University	(1910)	44
Washington University, St. Louis	(1910)	35

FAILED

Hahnemann Med. Coll. and Hospital, Chicago	(1909)	1
Kentucky School of Medicine	(1890)	1
Barnes Med. College	(1905) (1907) (1908) (6, 1910)	9
St. Louis Coll. of Phys. and Surg.	(1906)	1
Washington University, St. Louis	(1910)	1

At the examination held in Chicago, June 9-11, the total number of candidates examined was 260, of whom 236 passed and 24 failed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
Bennett Medical College		(1910)	7
Chicago Coll. of Med. and Surg.		(1909) (28, 1910)	29
Hahnemann Medical College and Hospital, Chicago		(1909) (18, 1910)	19
Hering Medical College		(1910)	1
Jenner Medical College, Chicago		(1910)	4
Illinois Medical College		(1910)	3
Northwestern Univ. Med. School		(1909) (93, 1910)	94
Coll. of Phys. and Surg., Chicago		(1908) (47, 1910)	48
Rush Medical College		(1910)	22
St. Louis Coll. of Phys. and Surgeons		(1909)	1
Columbia Univ., Coll. of Phys. and Surg.		(1905)	1
Eclectic Medical College, Cincinnati		(1910)	2
Jefferson Medical College		(1910)	2
University of Pennsylvania		(1875)	1
Meharry Medical College		(1910)	1
Trinity College, Dublin, Ireland		(1889)	1

FAILED

Bennett Medical College	(1910)	3
Chicago College of Medicine and Surgery	(1910)	3
College of Medicine and Surgery, Chicago	(1910)	2
Hahnemann Medical College and Hospital, Chicago	(1910)	2
Hering Medical College	(1910)	1
Jenner Medical College	(1910)	2
Illinois Medical College	(1910)	3
College of Phys. and Surg., Chicago	(1909) (4, 1910)	5
Reliance Medical College	(1909)	1
St. Louis College of Physicians and Surgeons	(1909)	1
Eclectic Medical College, Cincinnati	(1910)	1

Wisconsin July Report

Dr. John M. Beffel, secretary of the Wisconsin Board of Medical Examiners, reports the written examination held at Madison, July 12-14, 1910. The number of subjects examined in was 22; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 60, of whom 54 passed, including 3 osteopaths, and 6 were conditioned. Eighteen candidates were licensed through reciprocity and one was licensed under the exemption clause. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University Medical School		(1910)	82, 89, 90, 92
College of Phys. and Surg., Chicago		(1897) 82; (1910)	84, 87
Chicago College of Medicine and Surgery		(1910)	87
Hahnemann Medical College and Hospital, Chicago		(1909)	85
Univ. of Minnesota, Coll. of Medicine and Surgery		(1910)	87
Hahnemann Med. Coll. and Hospital, Philadelphia		(1907)	80
University of Pennsylvania		(1899)	87
Wisconsin Coll. of Phys. and Surg.		(1910)	80, 81, 82, 83, 86
Marquette University, Milwaukee		(1902) 83; (1909) 75; (1910)	76, 77, 77, 77, 78, 78, 79, 79, 80, 8- 81, 81, 81, 81, 81, 82, 82, 82, 82, 83, 83, 83, 83, 83, 83, 84, 85, 85, 86, 86, 87.
University of Christiania, Norway		(1908)	79

CONDITIONED

Marquette University, Milwaukee (1909) 75; (1910) 69, 71, 71, 73, 76.

LICENSED THROUGH RECIPROCITY

College.	Year Grad.	Reciprocity with
Gross Medical College, Denver	(1892)	Colorado
Chicago Coll. of Med. and Surgery	(1908) (2, 1909)	Illinois
College of Physicians and Surgeons, Chicago	(1903) (1904) Iowa; (1908) Illinois.	
Northwestern University Medical School	(1893) (1909)	Illinois
Medical College of Indiana	(1904)	Indiana
University of Maryland	(1908)	Maryland
Univ. of Michigan, Dept. of Med. and Surg.	(1903)	Minnesota
Hamline University	(1906)	Minnesota
Univ. of Minnesota, Coll. of Med. and Surg.	(1909)	Minnesota
Long Island College Hospital	(1908)	New York
Medical College of Ohio	(1887)	Ohio
Hahnemann Med. Coll. and Hosp., Philadelphia	(1890)	Illinois
University of Tennessee	(1907)	Texas

LICENSED UNDER EXEMPTION CLAUSE

College	Year Grad.
Marquette University	(1910)

Book Notices

ERGEBNISSE DER CHIRURGIE UND ORTHOPÄDIE. Herausgegeben von Erwin Payr, Greifswald, und Hermann Küttner, Breslau. Erster Band. Paper. Price, 20 marks. Pp. 526, with 152 illustrations. Berlin: Julius Springer, 1910.

The editor, recognizing the increasing mass of literature relating to the various specialties, and the very scattered manner in which articles on related subjects are published, thus making it difficult or impossible for one to keep in touch with all of them, conceived the idea of publishing a series of volumes, of which the present one is the first, which should contain articles on present-day subjects in surgery and orthopedics, written by men of recognized ability and based on a critical review of the literature up to date.

The present volume of 526 pages contains 12 articles as follows: Vessel and Organ Transplantation; Myositis Ossificans Circumscripta; Opsonins; Free Transplantation, Exclusive of Transplantation by Means of Vessel Suture; Treatment of Fractures; Methods of Covering Bony Skull Defects; The Parathyroids; Basedow's Disease; The Present Status of Differential-Pressure Methods in Surgery of the Chest; Benign Tumors of the Breast in the Light of Recent Investigations; The Operative Treatment of Herniæ of the Umbilicus, of the Lineæ Albæ and of the Postoperative Lateral Ventral Herniæ in Adults; Hypertrophy of the Prostate. Each article is well-illustrated and is preceded by a rather extensive bibliography covering the last few years. From the very nature of the work, the number of volumes is unlimited, but nothing is said as to the frequency with which they will appear. The intention is to take up as nearly as possible those subjects which have a "live" interest at the time.

The idea is a novel one and the success of the undertaking will depend on the ability to maintain the same standard of excellence in the articles of the subsequent volumes as is found in those of the first volume.

LEITFADEN DER EXPERIMENTELLEN PSYCHOPATHOLOGIE. Vorlesungen gehalten an der Universität Leipzig. Von Privatdozent Dr. Adalbert Gregor, Oberärzt der Psychiatrisch-Neurologischen Klinik Leipzig. Paper. Price, 5 marks. Pp. 222. Berlin: S. Karger, Karlstrasse 15, 1910.

Those who are aware that abnormal psychology is rapidly becoming a separate branch of medicine will not be surprised that special text-books on the subjects are appearing. Though this work is in the form of lectures, it covers the ground well.

The subjects taken up are: the psychopathology of time conception; reaction experiments; pathology of perception; association experiments in health and in mental disease; memory and its pathology; expression; attention; will; the emotions and bodily expressions of psychic conditions as revealed by the sphygmograph, platysmograph, psychogalvanic reactions, etc.; the laws governing intellectual efforts and methods determining intellectual capacity. All of these subjects are thoroughly treated, the literature, particularly the German, thoroughly sifted and a wealth of original observations added. The specialist occupying himself with the neuroses and psychoses will welcome this exhaustive monograph, but the busy general practitioner will find it too lengthy and intricate.

THE NEW INTERNATIONAL YEAR-BOOK. A Compendium of the World's Progress. For the Year 1909. Editor, Frank M. Colby, M.A. Associate Editor, Allen L. Churchill. Cloth. Price, $7. Pp. 702. New York: Dodd, Mead & Co., 1910.

This third number of the "New International Year-Book" is an improvement over the previous numbers, which should be expected, as the editors of the various departments increase in experience and profit from criticism and suggestion. Almost every subject of human thought and endeavor is treated; brief biographies of persons prominently in the public eye during the year are given; new inventions and great public works are described and illustrated; the articles on the achievements in medicine during the year seem well up to date. The work is informing, and is an interesting summary of the year's progress.

Medicolegal

Sadistic Insanity and Physical Examination of Defendant

The Supreme Court of Nevada says that in the case of State vs. Petty (108 Pac. R. 934) the defense relied on by the defendant for killing his wife was sadistic insanity. In support of this defense, he went on the stand and testified in his own behalf. He also called as a witness a Dr. Hepner, who qualified as an expert, and testified, among other things, to having made a physical examination of the defendant prior to the trial, and detailed certain physical conditions existing in the defendant, which, in part, formed a basis for his opinion that at the time of the killing the defendant was insane. For the purposes of rebuttal, counsel for the state requested the court to appoint three physicians and to order that the defendant be submitted to an examination by them relative to the physical conditions detailed in the testimony of Dr. Hepner. Over the objection of counsel for the defendant, the order as requested was made, and three physicians were appointed by the court for the purpose of making the examination. The examination was made in a suitable room in the county jail in the presence of counsel for the state and for the defendant. Each of the physicians so appointed by the court subsequently, on rebuttal and over the objection of the defendant, testified to the facts disclosed by their examination of the person of the defendant within the limits specified in the order of the court.

Exceptions to the order directing the examination, and to the testimony of the appointed physicians, were based on the contention that the constitutional guaranty that no person shall be compelled, "in any criminal case, to be a witness against himself," was violated. The court, however, holds that there was no error in the order or in the admission of the testimony.

In this case the defendant, the court says, had interposed the defense of insanity, had offered himself as a witness solely in support of this defense, had been physically examined by a physician for the purpose of enabling such physician to testify concerning his physical condition as bearing on his alleged insanity, and such physician had testified in regard thereto. He could not therefore interpose any legal objection to the state having the benefit of the same character of expert examination which he had through the testimony of his physician submitted to the jury.

Then counsel for the defendant further contended that it was an error to order the examination of the defendant's person or to permit the physicians appointed by the court to testify to facts disclosed by such examination, for the reason that the purpose of such examination was to contradict the witness Dr. Hepner for purposes of impeachment, and, as Dr. Hepner had, on cross-examination, testified that he had not based his opinion on the physical symptoms of the defendant testified to by him, "except the typical degeneracy written on his face and head," his testimony relative to the defendant's heart and genitals was as to an immaterial matter, and hence could not be contradicted for purposes of impeachment. But the court does not think that the testimony of the physicians appointed by the trial court could be regarded solely in the light of impeaching evidence. Dr. Hepner had testified at length as to the condition of the defendant's heart and genital organs, and it was not until cross-examination that he stated that he did not take into consideration the condition of these organs in reaching his conclusions as to the defendant's mental condition. Counsel for the defendant never withdrew this portion of Dr. Hepner's testimony from the case or offered to have it stricken out. It was all included in the hypothetical question propounded by the witness by the defendant's counsel.

Sadism is a mental disease in which the sexual instinct is abnormal or perverted. Where this character of insanity is relied on, the physical facts, here claimed to be immaterial, would very naturally be given some weight by the jury in the defendant's favor where it was shown by uncontradicted testimony that they were abnormal. The testimony of Dr. Hepner was that the defendant's heart and genital organs were abnormal, while that of the physicians appointed by the court was that they were normal. The court in ordering the physical examination of the defendant was careful to limit it to the points testified to by the defendant's own expert. If counsel for the defendant deemed these physical facts immaterial, he should not have offered testimony concerning them, but, having offered testimony of the existence of certain physical characteristics of the defendant, he was not in a position to object to the state offering testimony in reference to the same physical facts, and, as before stated, such testimony could hardly be held to be governed by the rules relating to impeaching testimony. At the time the order was made, it could not be told whether the investigations of the physicians appointed by the court would confirm the testimony of Dr. Hepner or not. The purpose of making the order was to enable the court to arrive, if possible, at the truth of the existence or non-existence of certain physical facts, which the defendant had introduced into the case in his defense, and not to impeach the defendant's witness. The mere fact that one expert witness may reach a conclusion different from that of another expert witness does not of itself impeach the former witness.

The objection to the testimony of the physicians appointed by the court was general, and went to all of their testimony, without specifying any certain portion thereof that was claimed to be immaterial. The examination also went to the head, including the mouth, teeth, and tongue, of the defendant, which were conceded to be material points. No specific objection to the testimony relative to the other alleged immaterial points was ever made. If such objection had been made, its overruling could not constitute prejudicial error, unless the defendant withdrew or caused to be stricken out the testimony offered in his behalf concerning the same facts.

Impeachment of Medical Experts

The Supreme Court of Washington says that in the homicide case of State vs. Newcomb (109 Pac. R. 355), a physician was called as a medical expert by the defense, and the state in rebuttal called witnesses to impeach him on his general reputation for truth and veracity. The ruling of the trial court in permitting such testimony over the defendant's objection was assigned as error. This was untenable. A medical expert, or any other expert, is subject to the same rule of impeachment as any other witness. He occupies no higher plane than the ordinary witness, nor does he stand on any different footing. The only difference is that he may be interrogated along hypothetical lines; otherwise he is subject to the same methods of examination and must subject himself to the same test of credibility.

Society Proceedings

COMING MEETINGS

Am. Assn. for Study and Prev. Infant Mort., Baltimore, Nov. 9-11.
Hawaiian Territorial Med. Assn., Honolulu, November 26-28.
Ohio Valley Med. Assn., Evansville, Ind., Nov. 9-10.
Southern Medical Assn., Nashville, November 8-10.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Sixteenth Annual Meeting, held at Pittsburg, Oct. 3-6, 1910

The President, Dr. Theodore B. Appel, Lancaster, in the Chair

Hospital Appropriations

The House of Delegates passed unanimously a resolution offered by Dr. John B. Roberts, requesting the legislature to appoint a commission consisting of members of the House of Representatives, the Senate, the State Board of Public Charities, two physicians and a lawyer, to investigate the subject of state appropriations to hospitals not under state control, and the management of all hospitals, and to report on a better method than the present of making hospital appropriations.

Pure Food and Public Health

The house reaffirmed its position taken last year on the question of pure foods, endorsing the work of the Federal authorities on this subject. It endorsed also the principles outlined in the Owen Bill, providing for the establishment of a department of health. Commissions were authorized to continue the study of malignant growths, the end-results in the treatment of fractures of the femur and the work concerning trachoma.

President's Address: Purposes of the Society

DR. THEODORE B. APPEL, Lancaster: Analyzing the purposes of this society as set forth in the ordinances we find that they cover a three-fold aim: organization, individual aid, and duty to the public, uniting in the one definite object of advancement of the medical profession in its usefulness as a distinct entity in the body politic. The development of this three-fold aim of our society forms an interesting study. The work of the committees on cancer and on tuberculosis, the work for the prevention of trachoma, and against the abuse of privileges by the refracting opticians, shows the progress in our work for the public. In our relation to the state in the matter of legislation our hope to unite all national efforts for the purpose of fighting disease seems near realization. The record of the sixty-two years of the society's life is a matter of medical history. Problems confronting us must be settled by cooperation of organized bodies with the people.

Infant Mortality

DR. SAMUEL G. DIXON, Harrisburg: Influences which are responsible for excessive infant mortality may be divided into prenatal and postnatal. Preventive measures must be educational and discreetly philanthropic. The problem is one which concerns the mental, moral and physical prosperity of all people throughout the civilized world, and to this extent every force and influence of individuals, societies, churches, schools, states and nations must be solicited and enlisted in a campaign of helpfulness which is the only solution.

Typhoid Fever in Pennsylvania—Past, Present and Future

DRS. SAMUEL G. DIXON and B. FRANKLIN ROYER, Harrisburg: Typhoid fever is preventable by prophylaxis and sanitation. Since the creation of the department of health much has been done, and a forecast shows that still greater advance is possible through hard work, much outlay of money and close cooperation between the family doctor and the health official.

Work of the Council on Pharmacy and Chemistry

DR. DAVID L. EDSALL, Philadelphia, gave a short summary of the problems the Council has met, the support received from the medical profession and from some manufacturers, and mention of the kinds of obstruction offered by other manufacturers. He also made a general statement of what has been accomplished with reference to its value to the profession, and consideration is given to future problems.

Oration on Medicine: Recent Progress in Medical Sociology

DR. CHARLES H. MINER, Wilkes-Barre: The medical profession in this country has probably done more for the benefit of the people and for its own reputation in the past few years through sociology than in any other field of their labor. In this connection may be mentioned the tuberculosis campaign, medical inspection of school children, the temperance movement, the prevention of cancer, and of venereal diseases. Social service in connection with hospitals has great possibilities. We may consider also in this connection the interest taken by the medical profession in industrial insurance and the employer's liability law, and the campaign for the prevention of infant mortality with special emphasis on the value of a clean milk supply.

Gall-Bladder Dyspepsia

DR. JOHN A. LICHTY, Pittsburg: The symptoms of the dyspepsia referred to are nausea, loss of appetite, flatulency, pyrosis, distress or a gnawing feeling below the ensiform cartilage, at certain times relative to meals. The gall-bladder and gall-duct affections include catarrh of the bile ducts, acute phlegmonous and gangrenous cholecystitis, acute infections and catarrhal cholecystitis, cholelithiasis and cancer. The symptoms usually described as indicating cholelithiasis are found in only from 5 to 35 per cent. of all cases. Hyperchlorhydria was found in about 70 per cent. in 298 cases of gall-bladder and duct affections. From experiments on dogs it seems that hyperchlorhydria is secondary to affections of the gall-bladder and ducts and is a symptom of considerable value. In cases of hyperchlorhydria in which gastric and duodenal ulcer are excluded, before the diagnosis of nervous dyspepsia is made the presence of disease of the gall-bladder should be carefully considered.

The Treatment of Fermentative and Putrefactive States of the Intestines

DR. DAVID L. EDSALL, Philadelphia: In this type of cases attention is too often directed to the bowel to the exclusion of the stomach. Emphasis should be placed on the importance of examination of the feces as a routine measure. Test diets are often misleading, and the examinations should be made rather while the patient is taking the usual diet. Improvement of the general tone of the abdominal muscles, attention to the circulation and blood-pressure are highly important factors. The condition should be regarded less as a disease of the intestines than as a chronic affection situated in the intestinal tract, and should be treated from the standpoint of increasing the resistance. Long-continued use of active purgatives is harmful. Surgical intervention is sometimes indicated.

Gastric Manifestations of Non-Gastric Disease

DR. CLEMENT R. JONES, Pittsburg, discussed the symptom-complex of non-gastric disease as compared with diseases of true gastric origin.

Constipation of Colonic Origin

DR. JUDSON DALAND, Philadelphia: Patients with chronic constipation due to abolition of the rectal reflex may secure relief by a determined effort to secure a movement of the bowels each morning immediately after breakfast. This effort of the patient may be supplemented by the introduction of a properly prepared soluble glycerin suppository or the employment of an enema. Diet, exercise, other remedial agents, drugs or surgery are of value in constipation colonic in origin.

Discussion on Gastro-Intestinal Derangements

DR. I. J. MOYER, Pittsburg: Many beginning gall-bladder cases are due to modern habits of improper eating and nervous hurry. I agree with Dr. Edsall, that the cause of many of the gastro-intestinal conditions must be looked for outside of the intestine. I think the treatment of constipation by the use of irrigations has been abused.

DR. ERNEST LA PLACE, Philadelphia: If we do not find the cause of the trouble in the organ apparently the seat of the difficulty, we should look for it elsewhere and remove it, no matter how foreign it seems to the condition present. We are apt to forget the intimate relation of all the organs within the abdominal cavity.

DR. JAMES N. ANDERS, Philadelphia: I agree with Dr. Lichty that gall-stone dyspepsia is frequently overlooked even by competent observers. In obscure cases, if the symptoms do not yield to ordinary measures, we should at once suspect an anatomic basis, as a rule, outside of the organ implicated, particularly if it be the stomach or intestine. In conditions with an actual pathologic change, medical treatment will not suffice.

DR. J. A. LICHTY, Pittsburg: The object of my paper was to conterbalance the paper, which in the early part of the year was put out by another author, laying considerable emphasis on appendix dyspepsia. Much that is said of appendix dyspepsia can be said of gall-bladder dyspepsia. A point to be emphasized is the obstinancy of the symptoms.

DR. J. DALAND, Philadelphia: I agree with Dr. Moyer that too constant use of irrigation may be harmful, but by carefully determining the quantity, the time of injection and the temperature of the water untoward results may be avoided.

Significance of Transient Cerebral Crises and Seizures as Occurring in Arteriosclerotics

DR. JAMES D. HEARD, Pittsburg: The following are some of the possible causative factors in these cerebral crises: the action of a toxin on brain cells in localized areas; a spasmodic localized contraction of cerebral arteries sufficient to interfere with the function, but not to affect the integrity of a part; so considerable a decrease in a compensatory hypertension that certain areas of the brain are temporarily insufficiently supplied with blood through the sclerotic vessels which supply them; localized areas of edema in the brain substance. In the light of our present knowledge, a toxic basis may be assumed as a general underlying cause for all these conditions. The supposition that the condition is due to a localized poisoning of brain cells is that which Tanzi invokes to explain the closely allied, if not at times identical, seizures of progressive paralysis. A simpler possible factor may be an intermittent closure of the blood-vessels supplying the affected area, which theory has the adherence of Russell, Osler and others. The association of cerebral seizures of an apoplectiform nature with migraine is now considered, and J. Mitchell Clark has observed apoplectiform seizures in nine members in three generations of a migrainous family in which hemiplegia, usually accompanied with aphasia, was a constant feature. The importance of an appreciation of the nature of these crises rests on the fact that their proper interpretation may influence both prognosis and treatment. There is danger in having a routine conception as to the blood-pressure desirable in an individual of a given age. As the cerebral seizures are usually the result of toxic influences, prompt measures should be instituted aiming at the removal of circulating poisons and the limitation of their further production.

DISCUSSION

DR. T. DILLER, Pittsburg: There are causes of cerebral palsy other than those which most of us learned in our student days. We are sometimes in the presence of a palsy, a hemiplegia, or monoplegia, which is cerebral in character and transitory in duration, and difficulty arises in its explanation. Where we can exclude the three common causes—hemorrhage, thrombus and embolism—we are a good deal at a loss, and while some of the theories advanced are very plausible, it must be said plainly that the diagnosis of the exact situation is difficult. I have seen several of the cases to which Dr. Heard refers. They may be due to arterial spasm, to local edema, or to an occlusion of the artery stopping short of complete closure. In the presence of an apoplectic stroke in a man in the forties, the practitioner should consider the possibility of paresis. The mental condition and history of previous transient attacks are to be considered in this connection.

Clinical Studies in the Auscultatory Method of Determining Blood-Pressure

DRS. EDWARD H. GOODMAN and A. ALEXANDER HOWELL, Philadelphia: By studying the relation of the five phases to one another, much may be learned diagnostically from the auscultatory method. No particular phase is of the greatest significance, but the importance of each phase should be interpreted by its relation to the other phases and by its relation to the total pulse pressure. The length of the individual phase should be recorded and its percentage relation to the pulse pressure should be ascertained. We have formulated the following conclusions: For accuracy and simplicity, the auscultatory method of estimating blood-pressure is to be preferred to any clinical method. In diagnosing aortic insufficiency, absence of the fifth phase is almost pathognomonic. In the diagnosis of cardiac neuroses, the recognition of tonal arrhythmias and irregularities in maximal and minimal pressure, and variation in sequence relation will prove of much value.

Mitral Stenosis

DR. J. C. WILSON, Philadelphia: It is generally agreed that rheumatic endocarditis is the most common cause of mitral stenosis. Whooping-cough is probably the occasional cause of the primary endocarditis as a result of the great mechanical stress on the ventral valve in the paroxysm. That mitral stenosis carries with it some degree of immunity against pulmonary tuberculosis requires confirmation. The etiologic uncertainties are greatly increased by the numerous cases encountered in young women in whom none of the ordinary causes of endocarditis can be determined. Muscular or spasmodic mitral stenosis and the mitral stenosis of acute malignant endocarditis should also be mentioned under causation. Observation of the well-recognized types of anatomic lesions in mitral stenosis shows variations so essentially different in their circulatory effects as to constitute at least two valvular diseases having little else in common than a narrowing of the auricular ventricular orifice, the physical signs to which that narrowing gives rise, and a tendency to the transference of the blood-pressure from the arterial to the venous side of the circulation. In my experience hemoptysis in mitral stenosis, though often very alarming, is usually followed by abatement of the cardiac symptoms and sometimes by prolonged improvement. The prognosis is less favorable than in mitral insufficiency. Treatment must be carefully adjusted to the individual case.

Treatment of Cardiac Irregularities

DR. ALFRED STENGEL, Philadelphia: Following the more common classification the irregularities may be divided into three important types: juvenile; extrasystolic; nodal rhythm. Conditions which ultimately determine myocardial failure are: (a) progressive increase of the myocardial disease; (b) conditions outside the heart, finally causing incompetency. Measures of treatment designed to prevent the former condition are improvement in nutrition, regulated exercise, tonic treatment, antisyphilitic treatment. Measures to prevent overhardening of a damaged myocardium are correction of gastrointestinal troubles, relief of strain and undue blood-pressure, promotion of renal and dermal activity. I would emphasize that in many cases of beginning failure of cardiac power we had better devote attention to the gastrointestinal tract and external conditions. The time will come when we must resort to the final effort of remedies directed to the heart itself.

Blood-Pressure and Other Observations in Hypertrophy and Dilatation of the Heart

DR. JOSEPH H. BARACH, Pittsburg: The observations are based on studies in a series of over 50 young men who had practiced distance running for at least six months and have to do largely with the pure forms of hypertrophy and dilatation such as occur in the absence of valvular lesions and history of previous disease. I can only conclude that there is a usual occurrence of transitory dilatation following cardiac overstrain.

The So-Called Nodal Rhythm of MacKenzie

DR. JOSEPH SAILER, Philadelphia: MacKenzie and others find as an essential feature of the tracing of the venous pulse a wave which occurs before the time of the contraction of the ventricles, which has been pretty definitely ascertained to be due to the contraction of the auricles, forcing the blood back into the veins of the neck from which the tracing is taken. MacKenzie observed in many of his cases of persistent arrhythmia that this wave was lacking. He concluded, therefore, that there was a synchronous contraction or a paralysis of the right auricle. In trying to find the cause of this it occurred to him that the node of Tawara which is found on the wall of the right ventricle and is probably situated on the conduction fibers passing to the bundle of His, might be involved, and that its involvement would account for this condition. It has been shown by the electrocardiagraph, that a series of fine contractions due to muscular effort take place in the right auricle between the ventricular contraction, so that complete paralysis of the auricular wall cannot be

present. This however does not necessarily invalidate MacKenzie's explanation. MacKenzie has applied the term "nodal rhythm" to this condition because he believes that the lesion is situated in the node. This view has not met universal acceptance.

Discussion on Heart Lesions

DR. LAWRENCE LITCHFIELD, Pittsburg: I want to emphasize the frequency with which mitral stenosis is overlooked. We make a diagnosis of mitral insufficiency and before the characteristic signs of the stenosis have developed we have ceased to examine the heart carefully enough and the condition is overlooked. I think the point is well taken that nitroglycerin may do much damage.

DR. GEORGE W. NORRIS, Philadelphia: I am willing to admit that nitroglycerin, under some circumstances, is a good drug, but I am strongly convinced that it is often much abused. As a rule it is not correctly given. Men in nitroglycerin factories develop headaches but become immune to the toxic effect of the nitroglycerin if they work long enough. Similarly if a man be given 1/100 gr. nitroglycerin for a week, you may at the end of a week have to give 1/250 gr. Without blood-pressure determination it is impossible to tell what one is doing.

DR. JAMES D. HEARD, Pittsburg: We must all realize the advantage of measures other than drugs to a great extent in the early stages of the conditions.

DR. A. STENGEL, Philadelphia: There is a certain relationship between polycythemia and cardiac disease. In the use of the saline baths the temperature is the most important thing. In a case under my observation the best results were obtained with the temperature at 94 F. Edematous patients do not respond so well as patients without that symptom.

DR. J. SAILER, Philadelphia: I think that nodal rhythm is interesting chiefly from the fact that it introduces to us a further refinement in cardiac diagnosis. I believe that our knowledge of cardiac disease is in an unsettled state. We merely know that the condition of nodal rhythm is one of those forms of cardiac disease in which the lesion seems to be in the conduction apparatus rather than in the valve or in the general muscular structure of the heart. The symptoms and reactions vary so greatly that it seems impossible to bring the cases into one clinical group. Treatment is largely experimental and will be directed according to the individual choice of the physician, by his experience and his impressions received from the experience of others.

(To be continued)

AMERICAN ROENTGEN-RAY SOCIETY

Eleventh Annual Meeting, held at Detroit, Sept. 29-Oct. 1, 1910

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Pulmonary Manifestations of Syphilis

MR. H. W. DACHTLER, Toledo, O.: The patients presented the clinical picture of early pulmonary tuberculosis, but failed to respond to the tuberculin test, nor did the skiagrams show any evidence of tuberculous lesion. The history of syphilis was obtained in each case, and the pulmonary findings cleared up under specific treatment, except in one patient, who died from myocarditis. In the skiagrams of these cases there was an increase in density over the lower part of the lungs, more marked on one side than on the other, so much so in one case that the diaphragm shadow was obscured on the right side. These cases might go to prove that whenever mercury produces a favorable result in so-called cases of pulmonary tuberculosis, the case was probably a syphilitic one and not tuberculous.

DISCUSSION

DR. A. W. CRANE, Kalamazoo, Mich.: A positive tuberculin test does not always indicate tuberculosis of the lungs. The disease may be located elsewhere. If syphilis is present, the Noguchi or Wassermann test should be used. It is quite probable that syphilis of the lung is more common than we have supposed.

DR. HENRY HULST, Grand Rapids, Mich.: The *x*-ray should not be used to make a differential diagnosis between tuberculosis and syphilis of the lung. Other clinical tests should be used for this purpose.

DR. GEORGE C. JOHNSTON, Pittsburg, Pa.: I have seen many cases of syphilis of the lung in colored children. The physical signs were precisely those of tuberculosis, but tubercle bacilli were never found in the sputum.

Fluoroscopy of the Gastro-Intestinal Tract

DR. EDWARD H. SKINNER, Kansas City, Mo.: Fluoroscopy of the gastro-intestinal tract properly performed is of great diagnostic value, even more so than radiography. The fluoroscopic symptoms of pyloric stenosis are dilatation of the stomach, antiperistaltic waves passing from the pylorus to the greater curvature, and interference with the emptying of the stomach. The fluoroscopic symptoms of carcinoma are irregular outline of the stomach wall, abnormal peristalsis, and if the carcinoma involves the pylorus antiperistaltic waves are seen. When there is involvement of the middle portion of the stomach there is hour-glass contraction. There may be adhesions of the stomach to adjacent organs, and the lumen of the stomach is much smaller than normal, except when the carcinoma is at the pylorus. In gastric ulcer, the irregularity in outline of the stomach wall is not so apparent as in carcinoma, because the irregularity is caused by muscular action, and not so much by changes in the stomach wall. When the ulcer involves the pylorus, there is also interference with the exit of food. In the precancerous stage the stomach has a lessened lumen, is placed rather high in the left hypochondriac region, and there is a small *Magenblase*. The pylorus is frequently lost behind the stomach shadow, and the filling shadow of the stomach is funnel-shaped. It is an atrophied stomach, dependent on a certain degree of starvation.

DISCUSSION

DR. HENRY HULST, Grand Rapids, Mich.: While I feel incompetent to diagnose cancer of the stomach skiagraphically, I think that the *x*-ray is more likely to make the diagnosis than are the clinical findings. In stomach diseases there is a decided place for fluoroscopic work. We can determine the size of the stomach, its location, motility and even the presence of enlargements, such as tumor.

Skiagraphy of Pancreas

DR. A. W. CRANE, Kalamazoo, Mich.: I have attempted to study the anatomic relations of the head of the pancreas to the duodenum. Bismuth salts suspended in water are administered, and will be found to coat the walls of the duodenum. By this means, the position of the duodenum can be determined and thus also the greater portion of the head of the pancreas. I believe that by means of the *x*-ray we can diagnose diseases of the pancreas, including tumors and cysts of the head of the pancreas, gall-stone obstruction of the pancreatic duct and diabetes. The pancreas is inaccessible to the diagnostician, hence the skiagraph may be of assistance. In all cases of pain in the upper abdomen a skiagram should be made, because the pancreas may be the seat of the pain. I do not believe that the axis of the gland as usually given in the text-books is correct. The loop of duodenum increases with the increase in size of the head of the pancreas. I have been able in a number of obscure cases to make a diagnosis with a skiagram.

Value of the Roentgen-Ray in Early Diagnosis of Carcinoma of Bowel

DR. FEDOR HAENISCH, Hamburg, Germany: I am convinced of the value of screen work in the early diagnosis of carcinoma of the bowel. I have had three cases in which my assumption has proved to be correct by operation. I do not make the diagnosis of carcinoma, because the skiagram cannot show that, but I do say that there is something wrong in the bowel which should be looked after. I determine this by injecting bismuth into the bowel, and watching its passage upward by means of the fluoroscope. In cases of carcinoma

the flow of bismuth stops, the bowel bulges, and then suddenly a little finger-like process of bismuth passes onward again. That is the sign I look for.

Enlargement of Thymus Treated by the Roentgen-Ray

DR. SIDNEY LANGE, Cincinnati: In four cases of enlargement of the thymus in which urgent pressure symptoms were present, I gave *x*-ray exposures and promptly relieved the patient. I then studied the action of the *x*-ray on the thymus gland of young rabbits, and found that it produced a rapid involution of the gland, which was followed by complete atrophy. It is essential, however, in order to avoid any possible after-effects, that the treatment should be pushed only to the extent of causing a reduction in the size of the gland, and not a complete atrophy.

DISCUSSION

DR. H. K. PANCOAST, Philadelphia: The effect of the *x*-ray on the thymus in these cases would probably help to explain the structure of the gland. I think that it consists largely of lymphoid tissue. We must be extremely careful of the dosage, because the patients are usually infants or young children, and to set up a toxemia would be little short of fatal.

DR. W. F. MANGES, Philadelphia: In one patient, a child six or seven months old, the symptoms came on suddenly and were quite severe. A diagnosis of enlargement of the thymus was made by a prominent practitioner in Philadelphia, and I was asked to use the *x*-ray. I did so, and was much surprised to see the child improve, all symptoms disappearing. They recurred for a little while, but disappeared again under *x*-ray treatment.

DR. G. C. JOHNSTON, Pittsburg, Pa.: I saw one very interesting case, in which the father of the child, a physician, made a diagnosis of enlargement of the thymus. I was unable to confirm the diagnosis skiagraphically. The child grew progressively worse, however, and an operation was decided on. As soon as the incision was made, there was a gush of pus and a large postlaryngeal abscess was evacuated. The child made a rapid recovery.

The Roentgen Ray as Aid in Diagnosis of Gall-Stones

DR. GEORGE E. PFAHLER, Philadelphia: Gall-stones can be shown with the *x*-ray only when they are composed of a substance of greater density than the surrounding tissue. This means that they must contain some cholesterin salts. Therefore, if the patient presents symptoms of gall-stones and the skiagraph fails to show stones, it does not mean that they are not present, but that they are devoid of lime salts and, therefore, did not throw a shadow. These pictures must be made quickly, and while the liver and gall-bladder are absolutely immovable.

DISCUSSION

DR. FEDOR HAENISCH, Hamburg, Germany: We must be very careful in making a diagnosis of gall-stones, because, as was pointed out, we may fail to get any shadow when the stone is of the same density as the film on the plate. However, with the technic Dr. Pfahler employs, I think better work will be done.

DR. HENRY HULST, Grand Rapids, Mich.: Putting a marker over the place where one expects to find a stone, as is done by some, is not wise, because the marker may hide the stone. The Mayos operated recently in a case of supposed kidney stone, seen in the skiagram, but failed to find it. The patient was turned over, the gall-bladder opened, and the stones were removed. That shows the difficulties of diagnosing these cases correctly.

DR. T. E. POTTER, Chicago: In three cases I obtained shadows on the right side which might indicate stone in the kidney, common duct or gall-bladder. Even the stereoscope did not help. Later I found stones in the kidney in each of these cases, with a gall-bladder infection.

DR. C. F. BOWEN, Columbus, O.: Making a skiagram an hour or two after a large meal, when the gall-bladder has emptied itself of bile, might help to give a picture of stone.

DR. PERCY BROWN, Boston: It is essential to have the large colon thoroughly empty; therefore, we should always give a good cathartic before making a skiagram. My percentage of positive diagnoses is about four, and I feel that is pretty good.

DR. E. H. SKINNER, Kansas City, Mo.: We can only expect to find stones containing calcareous material, and as only from 6 to 10 per cent. contain this material, we cannot hope to see the shadows of very many stones. My experience is limited to about 10 cases. One was rather interesting, because the plate showed 2 shadows, widely separated, which could be interpreted as a stone in either end of the gall-bladder. These 2 stones evidently were the only ones containing calcareous material.

DR. L. G. COLE, New York City: In one case in which I was sure stones were present, the skiagraphs failed to show a definite shadow, but I did see a peculiar small stellate shadow in the region of the gall-bladder. The patient was operated on and a soft cholesterin stone was removed. The nucleus of that stone corresponded to the stellate shadow shown in the plate.

Therapeutic Efficiency of Roentgen Irradiation

DR. G. C. JOHNSTON, Pittsburg, Pa.: The glandular affections wherein the *x*-ray has proved itself valuable are tuberculous lymphadenitis and goiter, except the cystic variety. In glandular disease, the results are permanent. In goiter, they are exceedingly gratifying, especially in the exophthalmic type, when seen sufficiently early. I have had twenty-four such cases, in which a cure seems to have been effected. In rodent ulcer, epithelioma and sarcoma of the skin, the Roentgen-ray is most effective; results are obtained in less time and at less expense than with any other method. Lupus, acne, chronic eczema and psoriasis are also tractable. Even in leukemia many good results have been obtained. Malignant tumors on or about the eyelids can be removed easily. Postoperative radiation should be employed as a routine measure after the removal of every breast for carcinoma or sarcoma, especially when there has been glandular involvement.

Roentgen-Ray Treatment of Carcinoma of the Breast

DR. RUSSEL H. BOGGS, Pittsburg, Pa.: In inoperable cases the ray will cause cessation of pain and hemorrhages, abolish discharge and offensive odors and arrest progress of the disease and bring about improvement in the general health of the patient. In some cases, the mass is reduced to such an extent that it will become operable. I have had twenty cases in which the results have been gratifying, but I would advise physicians not to depend on the rays alone, but to enlist surgical aid whenever possible, even in the inoperable cases. The pain in my cases was relieved for a period averaging a year, and in nearly every case the mass was reduced in size, the patient being free from pain and able to attend to her duties. Preoperative treatment is also of great benefit, and one surgeon has all his patients of this kind treated before operation. Postoperative treatment has been adopted by a large number of surgeons; it seems to insure a longer period of freedom from recurrence.

The Roentgen-Ray in Malignant Disease

DR. J. RUDIS-JICINSKY, Cedar Rapids, Ia.: My experience in the use of the ray in the treatment of malignant disease has been a satisfactory one. It not only often effects a cure, but in operative cases it prevents metastases. It is best to ray both before and after operation, because the infiltrated lymph channels and glands will be converted into fibrous cords and knots, thus preventing metastases. In the inoperable cases much good may be done.

DISCUSSION

DR. ALFRED L. GRAY, Richmond, Va.: The only trouble about preoperative treatment is that it may be given beyond the period when an operation will benefit the patient. This time no one can determine, and, therefore, it may be valuable time lost to proceed with Roentgen therapy. I am heartily in favor of giving a maximum dose just prior to the closing of the wound, while the patient is still under the anesthetic.

Aside from the physical benefit given in the inoperable cases, one of the greatest advantages of treatment by the Roentgen-ray is the comfort to the patient's mind. The patient feels that something is being done; this maintains his interest in life, and thus prolongs it for many days.

DR. W. F. MANGES, Philadelphia: I believe in the preoperative treatment mainly because so many surgeons are beginning to consider every breast carcinoma inoperable. The influence of such a procedure will be that in time patients having a lump of any size, however small, in the breast will proceed to the surgeon for advice. One surgeon advises Roentgen treatment if enlarged glands can be felt in the axilla, the treatment to be continued until such time as an operation seems indicated.

DR. H. K. PANCOAST, Philadelphia: In one case the breast was removed and the axilla cleaned out, but not the supraclavicular region. Roentgen-ray treatment was begun soon afterward and administered for thirty or more days. The patient was told to return in three months, but returned before that time because of a ring of nodules, extending from the posterior axillary fold around almost to the sternal line. They were entirely outside of the area of exposure, showing that the ray was effective in preventing a recurrence in the area treated.

DR. GEORGE E. PFAHLER, Philadelphia: I am more convinced than ever of the efficacy of Roentgen-ray treatment of malignant disease. In one case of ulcerating mammary carcinoma which was pronounced inoperable, I succeeded in reducing the lesion to an easily removable scar, an inch in diameter. The patient is perfectly well to-day. I feel that we should treat these patients until they are ready for operation; that is, until the disease has become localized. I do not agree to the giving of a large dose before the wound is closed.

Roentgen-Ray Treatment of Leukemia

DR. HENRY K. PANCOAST, Philadelphia: As a result of the observation and treatment of twenty cases, I am forced to the conclusion that the Roentgen ray seems to be no more than a palliative measure in leukemia—one which affords a prolongation of life for a variable period through inhibition of abnormal cell proliferation. It is necessary to ray the bones as well as the spleen. The direct exposure of the bone marrow seems to produce a more powerful and more lasting inhibitory effect on the leukocytic substances. The applications are made over the bones of the entire skeleton, each area being exposed regularly and systematically. Exactness in dosage is essential, so as to avoid a toxic reaction. Prolonged periods of rest from treatment are to be avoided. A symptomatic cure has in some instances been sufficient to prevent a relapse and ultimate death.

Bone Cysts

DR. F. H. BAETJER, Baltimore, Md.: The radiogram has assumed a place of importance in differentiating bone cysts from sarcomas, thereby saving many patients a mutilating operation. In the case of the bone cysts, the bone seems to be swollen, the cortex thinned out and the medulla replaced by a smooth, dark shadow of uniform consistency. The cyst is walled off from the rest of the bone and there is no evidence of an invasion of the shaft. The periosteum is not involved. These are the essential points of difference between bone cyst and other diseases of the bone. I have had six cases, in three of which a clinical diagnosis of sarcoma had been made. In one case the arm was amputated, and when the plate was sent to me afterward I pronounced it a bone cyst, and the pathologic findings confirmed this diagnosis. All that needs to be done in the case of a bone cyst is to open and evacuate it.

Stereoscopic Radiography

DR. EMIL G. BECK, Chicago: Stereoscopic radiography will help solve the problem of correct interpretation. I have employed this method almost exclusively for several years, and as a result I am convinced of its value. I am a strong advocate of stereoscopic work. It will enable even the general practitioner to interpret plates correctly. Shadows may be studied more profitably, and depth and size determined more easily. In the study of fractures and dislocations, the location of foreign bodies, and in the study of diseases of the bones and joints, of sinuses and abscess cavities, stereoscopic radiography is exceedingly valuable.

Mental Disturbance Caused by Painless Dental Lesions

DR. HENRY S. UPSON, Cleveland: I have had some experience with mental cases, ranging from psychasthenia to dementia præcox and imbecility, in which the exciting cause proved to be some painless dental lesion, such as an impacted tooth. My attention was called to this fact accidentally, and since then I have made it a routine practice to have a skiagram made of all these cases, with the hope of finding some irregularity about the teeth and jaw. I consider the use of the Roentgen-ray in diagnosis as necessary as the stethoscope and the thermometer. Deep-lying lesions are usually painless, but are often disastrous as irritants. I am firmly convinced that in my cases the mental aberration was caused by impacted teeth, alveolar abscess, and other dental lesions.

DISCUSSION

DR. W. C. HILL, Cleveland: The ill effect of eyestrain and adenoids is well-known, and there is no reason why the teeth should not be considered in the same class. Marked irritation from a tooth is fully as disastrous as the irritation of eyestrain. I have seen some of Dr. Upson's cases and can verify his statements.

DR. H. K. PANCOAST, Philadelphia: During the past year I have made skiagraphs of several hundred dental patients, some of whom were Dr. Upson's. I am convinced that peripheral irritation often is responsible for obscure neuralgic pains; and there is no reason why mental aberration should not be produced in the same manner. Recently, I was asked to examine the head of a patient for possible brain tumor or old fracture to account for persistent headaches. The skiagram was made and showed the presence of an impacted molar in both upper and lower jaws, and evident disease of the antrum on the same side.

DR. FEDOR HAENISCH, Hamburg, Germany: I saw one very interesting case of severe trigeminal neuralgia. The patient had been subjected to several operations, but secured only temporary relief. I made several skiagrams of the head, but failed to find anything to account for the trouble. Finally, I made a skiagram of the mouth and found imbedded in the jaw a part of a root of a first bicuspid. This was removed, the pain ceased within a week and never recurred, after having been persistent for almost seven years.

DR. C. E. COON, Syracuse, N. Y.: I had one case of persistent torticollis, in which the removal of a third molar, which was crowding the first and second molars, effected a speedy recovery.

DR. W. F. MANGES, Philadelphia: A case of persistent neuralgia, in which a bicuspid had been extracted and later the root of this tooth removed, was shown by the skiagram to have been caused by a single little thread of gauze that had been left behind after the removal of the drainage. This thread was removed and was coated with calcareous material. The patient immediately recovered.

DR. G. C. JOHNSTON, Pittsburg, Pa.: I have seen a number of nervous wrecks among women in which the cause was an impacted tooth.

DR. GEORGE E. PFAHLER, Philadelphia: A theologic student had been told that he was suffering from dementia præcox, and was advised to discontinue his studies. I made a skiagram of his mouth and found an abscess at the root of one of the molars. This was treated, and a month later the man had made a complete recovery. In another case, I found the roots of six teeth abscessed. We must make the physical examinations complete, and not limit ourselves to an examination of any one part of the body.

Chronic Joint Disease from Roentgenologic Standpoint

DR. ROLAND HAMMOND, Providence, R. I.: I wish to emphasize the importance of recognizing visceroptosis as a causative factor in chronic joint disease. It may be congenital

or acquired, the latter usually being the case. It is due to faulty attributes of the body, relaxed conditions of the suspensory ligaments of the viscera, atony of the abdominal walls, skeletal deformities. The Roentgen-ray is particularly useful in determining the character of the changes in the joint. It discloses distinctly thickening of the synovial membranes, ligaments and tendons, change in bony structure, villous growths and accumulations of fluid. Atrophy and hypertrophy are easily recognized. In infectious arthritis the skiagram may not show any change in the joint, even though ankylosis may be present. These cases are probably due to the presence of toxins rather than bacteria. Gout and the various types of rheumatoid arthritides are easily recognizable in the skiagram. The careful use of the Roentgen-ray in the diagnosis of obscure joint affections invariably proves profitable.

Removal of Foreign Bodies Under Fluoroscopic Examination

DR. CHARLES F. BOWEN, Columbus: I have done considerable work with the fluoroscope in removing foreign bodies from the bronchi, trachea, esophagus and elsewhere. I use a special cable for this work, so that both the patient and I are sufficiently protected from the rays. The work can be done very quickly, and much more successfully, than can the average operation performed without the use of the fluoroscope. This method is applicable only in cases in which the foreign body is dense enough to cast a shadow on the fluoroscopic screen. By this means I have succeeded in removing foreign bodies from the esophagus and bronchi in cases in which the surgeons failed utterly. This work must be done under thorough antiseptic precautions, and by a roentgenologist who has surgical experience.

Tumor of Hypophysis

DR. HARVEY CUSHING, Baltimore: For the purpose of determining the exact configuration of the sella turcica, the *x*-ray is invaluable. It has become one of the most important adjuncts of our diagnostic measures. This is a matter of importance since surgery has found ways of approaching the gland with reasonable freedom from risk. The only cases in which operative measures are justified are those in which the local symptoms are pronounced, and in which the skiagraph shows an enlargement of the sella turcica.

Stereoskiagraphy of the Urinary Tract

DR. EUGENE W. CALDWELL, New York City: I have found the stereoscope almost indispensable in this work. Accuracy is of such great importance, that we cannot neglect any procedure which will be useful in occasional or unusual cases. It is imperative to make at least two complete sets of plates, using proper appliances and technic. A styleted ureteral catheter or an air-inflated bag in the rectum or vagina will aid in determining the exact position of the ureters.

MICHIGAN STATE MEDICAL SOCIETY

Forty-Fifth Annual Meeting, held at Bay City, Sept. 28-29, 1910

(Continued from page 1492)

Use of Carbon-Dioxid Snow

DR. ANDREW P. BIDDLE, Detroit, spoke on the use of carbon-dioxid snow, and demonstrated a new instrument for moulding snow.

DISCUSSION

DR. HENRY R. VARNEY, Detroit: In many of the small benign growths, and in nevi, especially of certain depth, and in lupus erythematosus and lupus vulgaris, this treatment is excelled by no other means of medication or operation. When we destroy a wart, mole, rodent ulcer, or epithelioma, and destroy the pathologic tissue and go through into the true skin, we must expect some discomfort, some pitting, some scarring, so that to promise the patient that there will be no effect following the application of the snow is to my mind a little bit far-reaching, and I am afraid if we do that we will be a little disappointed. There is no pathologic condition, such as a mole or wart, that we cannot help by application of the snow if we avoid the healthy surrounding tissue. A number of these lesions will recur if other stimulants are not employed to encourage or stimulate the surrounding healthy cell, and replace the destroyed tissue.

DR. A. W. CRANE, Kalamazoo: Carbon-dioxid snow is a destructive agent. It does what an operation would do, namely, destroys the pathologic condition and a certain amount of tissue, and recovery occurs as a process of healing with the pathologic tissue in place. It may be possible that there are some products absorbed into the system so that there will be some blood serum reaction with carbon-dioxid snow. If that is true it would rival the *x*-ray. The *x*-ray treatment of a skin lesion, or epithelioma of the skin, is in the long run a blood reaction. It is not a process of local destruction. The skin lesion will heal in some cases even without local inflammation, but in a case of lupus, for instance, if the blood be examined, it will be found that the opsonic index will rise after every *x*-ray treatment just as though there were a vaccine of a tuberculous substance injected. In some way or other, by the use of the *x*-ray, we have introduced a vaccine into the circulation.

DR. M. L. HOLM, Lansing: In a case which had been diagnosed lupus, and in which the lesion tended to spread around the nose, the man was treated for three months with the *x*-ray, and the lesion continued to spread. The patient then went to Dr. Biddle, and within three weeks after the treatment with carbon-dioxid snow was begun, the lesion was practically healed. Whether there will be a recurrence or not, I do not know.

DR. F. W. ROBBINS, Detroit: We must not take too much into account the fact that the tissue has been destroyed, because those who have had experience before these two methods were mentioned apply caustic paste to an epithelioma, and after removing the paste from a tumor or growth an inch in diameter, they would find that healing had taken place.

DR. A. BIDDLE, Detroit: This treatment is not brought forward as a cure. Those who have watched the development of the *x*-ray know that its limitations in skin diseases have been very great. I know that in some cases the patients are better operated on by the knife, but I claim from clinical experience that there are patients who will not submit to the knife.

Points in the Management of Breast Feeding

DR. THOMAS B. COOLEY, Detroit: If successful breast feeding is to be as common as it ought to be, the general practitioner must give it more attention, and must become better versed in the detail of its management. Contraindications to nursing are not so numerous as some physicians seem to think; artificial feeding is often adopted for very trivial reasons. The contraindications may be summed up as follows: first, the possibility of transmitting a serious infection; second, the danger of a serious drain on an ill or exhausted mother. The last should not be too readily assumed. Under other conditions nursings should be attempted. Rational, normal hygiene and diet are essential for the mother. Unnecessary restrictions in the diet, or distasteful additions, may disturb her nutrition, and thereby the milk supply. Rational exercise and freedom from worry or excitement are important. Gruels and other supposed lactagogues are to be used when needed rather than as routine measures. The intervals between nursings should be at least three hours always, and four hours after the first few weeks. It gives the child's stomach rest and lessens colic and other annoying symptoms; the child also sleeps better and is more comfortable. Feeding by the clock is not advised. Within reason, the child should be fed when it is hungry. Colic is usually a result of fat indigestion; it is less frequent with the longer interval. Over-rich milk is a common cause, and this may be corrected often by diet and exercise, or by giving water before nursing. Over-feeding is also a cause. Even when persistent,

it is not an excuse for weaning if the baby is thriving. Variations in quantity and quality of milk are common. Quantity should be ascertained by weighing before and after feeding. There is no absolute standard of quality, and the best guides are the behavior of the child and the character of the stools. Mixed feeding is indicated by failing supply. The old method of replacing one or more nursings by the bottle is not so good as to supplement each nursing by a small bottle feeding. The supply of breast milk can be maintained longer in this way. Weaning for insufficient reason is altogether too common. Before the sixth month it should be done only on account of failure of the breast milk, serious persistent digestive disturbance, or failure of the child to gain under careful intelligent handling. The normal weaning at nine or ten months is best managed through a course of mixed feeding.

DISCUSSION

DR. H. MCLAREN GALE, Bay City: First the essayist emphasized the regular and liberal feeding of the mother with plain food, and then insisted on feeding of the child at three to four-hour intervals in place of the two-hour interval. It is unnatural and cannot but be injurious. For colic in children care in the diet is the main thing, as the cause of colic is too frequent feeding.

DR. HERBERT M. RICH, Detroit: On one point I am sure Dr. Cooley will agree with me, and that is the use of wet nursing in substitute feeding. It can hardly be denied that if a very young child can be given mother's milk, it is the thing to do. In this country this method has not been employed to any extent as it is abroad, but we should encourage the practice of wet nursing.

DR. E. E. CURTIS, Saginaw: In regard to wet nursing, I would like to offer some suggestions that I have found of considerable value, and that is procuring for the baby two or three wet nursings a day. I have found that when bottle-fed babies a month or two old were failing if they could have one or two nursings a day some lives have been saved.

DR. JOHN H. CROSBY, Otsego: There are very few contraindications to breast feeding. Certain women have no milk at all, and they must be ruled out, but in most cases of so-called contraindications it is simply mismanagement of the feeding. If in these cases we pay attention to the management of the proper interval and the proper length of time of nursing much will be accomplished in saving the breast to the child, and every day that the baby takes breast milk its chances are so much the better for life. I had an opportunity not long ago to observe the methods of feeding in some of the clinics in Berlin, and I found that in the hospitals four-hour intervals are followed in every case for the first six weeks. The baby was fed six times in twenty-four hours, and after six weeks were up, the normal child was fed five times from 6 o'clock in the morning until 10 o'clock in the evening, and nothing from then until 6 o'clock. The results were uniformly good.

DR. M. L. HOLM, Lansing: From a laboratory standpoint, we find that if the milk is sufficient in quantity, and the child is not doing well, the majority of physicians think first of having the milk analyzed. I find that about two-thirds of the milk sent in for analysis is the first portion of the milk, and those who send it in are surprised to find that the fat contents will amount to 1.5 or 2 per cent. Invariably when milk is taken for analysis the entire amount should be taken. If less milk is collected it will be high in fat. As a general thing, I think the fat contents is a good indication of the quality of the milk. The entire milk of one breast should be collected, and even the whole, or a portion of it presented for analysis.

DR. T. B. COOLEY, Detroit: In my experience protein indigestion is very rare in a child at the breast except in case of overfeeding. If a child is overfed all around, and there is too much milk, there will be general indigestion; but otherwise protein indigestion with breast milk is a rare experience. Wet nursing is not so common as it ought to be in this country. It is one of the greatest helps in managing babies, and the general practitioner appears to be too confident of the success of bottle feeding.

Tuberculosis in Children

DR. HERBERT M. RICH, Detroit: The last word has not yet been said in regard to tuberculin tests. Von Pirquet himself does not claim that the tuberculin test is especially suitable for infancy, and I have used it up to the age of 2 years. If the Pirquet reaction is positive under the age of 2 years there is probably a tuberculous process which has not yet been quiescent very long. I have seen two cases of severe conjunctivitis at the children's hospital from the use of the Calmette tests, and the fact that tuberculous chorioiditis is not unusual in small children is an argument for care in its use. I have used the Moro test very little. I have tried it a few times, but have found the v. Pirquet easy to use and satisfactory. The points to be emphasized are that nearly everyone is affected with tuberculosis in childhood, and if physicians are to combat it successfully we must realize that. A number of cases of malnutrition, marasmus and some others which I have seen at autopsy showed broken-down glands, and this has led me to believe that the disease is much more common than we suspect. If we are going to make a great advance in the treatment of tuberculosis we must do it in children. The way in which we will finally conquer tuberculosis, if we do conquer it, will be to teach the children in school and to eliminate school children as the source of infection.

DISCUSSION

DR. VAUGHAN, Detroit: I was glad to hear Dr. Rich say that pulmonary tuberculosis is more common in children than is generally supposed. I was led to think that I could find tuberculosis where it did not exist. In connection with my work on the board of health in Detroit I have had occasion to examine many children of poor families, and have found them infected with tuberculosis to an appalling extent. Whereas the results of physical examinations are somewhat doubtful and dubious owing to the characteristics of the breast sounds in children, still certain of those do show signs not only of consolidation, but also of cavities which were apparent on very superficial examination. I have taken as a rule children of tuberculous parents, having subjected them to the tuberculin test. If they reacted positively they were transferred to the hospital for a period of observation, and without exception these small children have shown clinical evidence of active tuberculosis, as indicated by a rise of temperature to 100 F., and by rapidity of the pulse, both being combined at some stage during the day. My experience has been that these children do remarkably well.

DR. JOHANN FLINTERMAN, Detroit: We do not know where to seek the cause always, but if we investigate these cases and at the time the diagnosis is made take in the whole clinical picture, we would never fail to see that it is tuberculosis.

DR. THOMAS M. KOON, Grand Rapids: In the last two or three years I have used the v. Pirquet test extensively. I have now in the state sanitarium six patients whom I sent there, and in every one of whom I used the v. Pirquet test. The symptoms, the early history, and the findings in each case pointed to the individuals having tuberculosis. On top of that I gave the v. Pirquet test; they reacted, and I felt safe in concluding that I was dealing with cases of active tuberculosis. The Calmette test is considered dangerous by a great many workers, and there is a wide difference of opinion about it.

DR. JOHN H. CROSBY, Otsego: The v. Pirquet test is of value up to 6 months of age, and if a positive reaction is obtained up to that time one can say that the child has active tuberculosis. After that one can simply say that the child has or may have had active tuberculosis. The only positive contraindication for breast feeding in children is tuberculosis in the mother.

DR. FRANK SMITHIES, Ann Arbor: From personal observation of between 600 and 700 instillations of tuberculin into the eye, I may say that only in five cases have there been any serious results, and I may add, at the same time, that if careful examination of the eye had been made previous to the instillation, or if the patient had been kept under close observation it is extremely doubtful as to whether there would have been any deleterious effect whatever.

A Business-Man's Cold

DR. J. VERNON WHITE, Detroit, spoke of vocation and habits as etiologic factors in a common cold; how to prevent a cold; how best, and to what extent a physician can formulate a system of treatment by which a man can continue with his business without jeopardizing his health.

(To be continued)

MEDICAL ASSOCIATION OF THE SOUTHWEST

Fifth Annual Meeting, held at Wichita, Kan., Oct. 11-12, 1910

The President, DR. G. H. MOODY, San Antonio, Texas, in the Chair

Addresses of welcome were delivered by Hon. C. L. Davidson, mayor of Wichita, Dr. O. P. Davis, president of the Kansas State Medical Society, and Dr. E. J. Oldham, of Wichita, Kansas, and were responded to by Dr. J. Becton, Greenville, Texas.

Colica Mucosa

DR. E. H. THRAILKILL, Kansas City, Mo.: I have chosen the designation colica mucosa from the long list of names that have been proposed for non-infectious diseases of the mucous membrane of the colon. It is most appropriate for it designates the passage of mucus and the attacks of colic. Formerly, this subject was considered a constitutional disease, owing to the lack of scientific knowledge of the etiology and pathology, but in recent years various views and opinions have arisen and have been published. I have adopted the following classification:

1. Those cases due to a motor and sensory neurosis I designate as simple colica mucosa.
2. Those due to extracolonic conditions, causing interference with the movement of the fecal discharges, I designate as colica mucosa reflexa.
3. Those due to an extension of the inflammatory process from the rectum or appendix, or when due to the retention of hardened fecal masses, foreign bodies, or to the prolonged use of cathartics, causing an inflammatory condition, I designate as mucosa colitis.

Each class requires a different treatment surgically and medically.

In chronic cases, or in those due to a mechanical interference or an inflammatory process, the mucus is thick, tenacious and attended with considerable pain, due to the strong peristalsis of the bowel in its effort to dislodge and expel it. The majority of these patients give a history of disturbed digestion or constipation, preceding the onset of this affection. I have had patients give a history of diarrhea preceding or accompanying this trouble. As a rule, the diarrhea was caused by a diet composed of a concentrated food and the lodgment of fecal crumbs throughout the bowels.

DISCUSSION

DR. ARTHUR E. HERTZLER, Kansas City, Mo.: The classification given is very sensible. The difficulty that has arisen in our conception of this disease has been due to confusing the various classes of cases. In some cases the condition is neurotic; in others it is not. We have not used so much care as we should have done in separating the different cases. A patient may present a history of some neurotic condition, and the natural inference is that the trouble is the result of nervous disease, and yet the disturbance may be secondary to some abdominal lesion which is obscured by the existence of the organic trouble. Unfortunately, we are not in possession of enough knowledge of the abdominal conditions which develop in these nervous states. Most of the cases of colica mucosa I have seen have been in neurotic subjects, who have responded to treatment by the neurologist. There are a number of cases attended by stomach disturbance, and in others by diverticular formations, and yet there is no definite pathologic lesion or defined symptomatology.

DR. G. W. ROBINSON, Kansas City, Mo.: My experience with colica mucosa has been confined chiefly to cases among the insane. This condition is more frequent among them than in any other class of patients. Constipation is common among insane patients, and we find that there is a disturbance of the function of the cells of the central nervous system, and I believe this condition is chiefly a perversion of the secretory nerves as well as the motor nerves of the intestine.

Postoperative Care and Treatment of Suprapubic Prostatectomy

DR. D. W. BASHAM, Wichita, Kan.: Suprapubic prostatectomy offers a marked exception to the expectant plan of postoperative treatment. The after-treatment is fully as important as the operation itself. Many patients either would die or would recover without full functionating power of the bladder unless they had suitable treatment during convalescence from the operation. Suprapubic prostatectomy should not be performed outside of a hospital, unless an experienced male nurse can be left with the patient to attend to the details of after-treatment. Most of these patients are in an enfeebled condition, brought about by years of catheter life with infection of the bladder accompanied with pain and vesical tenesmus. Frequent attacks of urinary stasis may have resulted in an ascending pyelitis. These conditions may all be aggravated by prolonged and crude efforts to pass the catheter. It is possible for pyelitis to be provoked after operation, provided the drainage is not absolutely unobstructed. Drainage is indispensable in most cases of suprapubic prostatectomy. There are a few cases in which the bladder may be closed and urethral drainage depended on, but they are not numerous. The rubber tube having a diameter of not less than half an inch, fenestrated toward the end and having the edges pared to a feathery thinness, constitutes the best method of drainage. If the tube be even larger in caliber, it is still better. Hemorrhage may be controlled and treated through a large tube. The method of placing the drainage tube is important. Neither the drainage tube nor the bladder should be stitched to the abdominal parietes. It is better for these patients to get out of bed early. This facilitates both drainage and the early passage of the urine through the urethra.

DISCUSSION

DR. JABEZ N. JACKSON, Kansas City, Mo.: I am a strong advocate of the perineal route in removing the hypertrophied prostate rather than the suprapubic. In my early practice I resorted to the suprapubic method, but abandoned it subsequently for the perineal, as one of the great difficulties attending the former is the establishment of proper drainage through the suprapubic wound. If I were going to do a suprapubic prostatectomy as a routine measure, I should be inclined to employ the method of Senn, namely, do the operation in two stages, the first stage consisting of making an incision down to and exposing the bladder wall, followed by packing until the cellular space about the bladder is closed by granulations, then making an opening through the bladder. In this way, we do away sometimes with disagreeable infection which takes place in the freshly exposed cellular tissues and which ultimately interferes with the healing of the wound.

DR. BRANSFORD LEWIS, St. Louis: I have always advocated catholicity in connection with this subject and freedom from being restricted to any one operation, still my preference is for the perineal operation in selected cases. I have never been converted to the use of a large tube, such as is used by Freyer and others, because I have not been able to see the advantage of it, particularly when drainage can be accomplished just as effectually and satisfactorily by a smaller tube which will entail a shorter time for convalescence and granulation than a very large tube. The formation of clots can be prevented by the siphonage apparatus of Bremerman, of Chicago.

DR. E. G. MARK, Kansas City, Mo.: While I favor the perineal route in most cases, yet there are instances in which the suprapubic is unquestionably the one of choice. The main thing after suprapubic prostatectomy is drainage, and patients with hypertrophied prostate requiring prostatectomy practically always have cystitis. To obviate the occurrence of hemorrhage, to secure efficient drainage, and to do away so far as possible with the formation of clots following cystotomy, nothing in my hands has proved so valuable as continuous irrigation for 24 or 48 hours.

DR. J. D. GRIFFITH, Kansas City, Mo.: I have done more suprapubic operations than perineal. While I admit the advantages of the perineal route, I think with Freyer that there are many cases in which a suprapubic cystotomy is demanded, and that efficient drainage is the thing *par excellence*. I believe in irrigating the bladder and in siphonage, and I believe in protecting the space of Retzius with gauze.

DR. HOWARD HILL, Kansas City, Mo.: I favor the use of a large tube through the incision after suprapubic prostatectomy, as I believe it is more advantageous than a small one. After the operation, continuous irrigation with hot water, with the patient propped up well and on the side, will control the hemorrhage. Hemorrhage is one of the serious objections to suprapubic prostatectomy, because it occurs from the time the operation is begun, and hemorrhage marks the first stage in the after-treatment of the patient. In regard to suturing around the tube to prevent leakage, one can secure the skin and bladder together.

DR. G. B. NORBERG, Kansas City, Mo.: My experience has been confined largely to operating on these hypertrophied prostates by the perineal route, and I prefer it to the suprapubic operation.

DR. D. W. BASHAM, Wichita, Kans.: It is evident that the last word on prostatectomy has not been said. Each speaker has voiced his own convictions in the matter, and that spirit is to be admired because it is in that way we advance our knowledge. This is an important operation and it behooves us to master all the details connected with it in order that we may increase its safety.

New Method of Cure for Pelvic Infections in Women

DR. J. F. KUHN, Oklahoma City: Peritoneal infections of the pelvis are easily controlled, because with the Fowler position the infectious material is confined to the pelvic cavity, where toxins are more slowly absorbed than in the upper peritoneal regions, and in consequence the system produces antibodies rapidly enough to counteract their effects. I wish to lay special stress on the treatment through the rectum with normal saline solution. By the method I suggest, the rectum is distended at six hourly periods with from one to four pints of the solution at 105 F., the quantity being gradually increased as tolerance for a larger amount is established. Intermittent periods of hyperemia are produced, thus hastening the destruction of the infecting organisms, inducing more rapid absorption of the resultant plastic lymph, and preventing the formation of dense adhesions so commonly seen in the neglected cases. It has all the other advantages of normal saline solution, stimulating and aiding the emunctories in ridding the system of the products of infection; fortifying the system during its struggle to produce antibodies and finally, by the action of heat locally, relieving the patient of the distressing pain which is the chief complaint. One patient suffering with streptococcus puerperal sepsis was delivered March 10, 1910, and 5 days later had a chill with high fever and great tenderness throughout the whole pelvis. She was placed on this treatment until March 31, when the saline was withdrawn for a few days, to be continued thereafter at twelve hourly intervals. She made a complete and uninterrupted recovery.

DISCUSSION

DR. A. E. HERTZLER, Kansas City, Mo.: In the first stage of gynecologic gonorrhea, the women are put to bed, their bowels are moved, and practically nothing more is done. The result of this line of treatment runs something like this: About two-thirds of the patients recover their health; about one-quarter of these two-thirds will conceive. The remaining third will come to operation. At the end of the first few days there will be a leukocyte count of from 15,000 to 25,000, which will drop down to normal in two or three weeks; this drop is preceded by a drop of the temperature to normal. The temperature falls to normal usually ten days before the leukocyte count does. I have obtained excellent results from the use of autogenous serum in chronic cases of gonorrhea; but experience with the stock serum has not been satisfactory.

DR. J. A. WALKER, Shawnee, Okla.: I have not tried the method outlined by Dr. Kuhn. Usually within a reasonable time inflammation of the Fallopian tubes will subside and incarcerate itself by the adhesions of the fimbriæ and, ordinarily, by occlusion of the uterine end of the tube. The pus cavity will thus be isolated from the general peritoneal cavity, though not sufficiently to prevent the formation of strong adhesions to the surrounding tissues. So long as adhesions are present the patients are going to have trouble. If the inflammation is of a streptococcus nature, the adhesions are more liable to be dense than if they are from the Neisser coccus; and when the adhesions are so strong and dense, I do not believe it is wise to be too conservative and wait too long before breaking them up and removing the foreign body, which an old collapsed occluded tube is bound to be. My practice has been to wait a reasonable time for the inflammation to subside and, perchance, for the pus after having become sterile to be reabsorbed. If I think such a thing has not occurred, I remove the tube, leaving all ovarian tissue possible.

DR. J. D. GRIFFITH, Kansas City, Mo.: We know how dangerous infection is from the Neisser coccus and how frequently we meet it. I have used the serum in these cases, and I have used the knife. I have resected the tubes and tried to save organs that I thought would functionate, but the treatment Dr. Kuhn has outlined in the acute stage of filling up the rectum with normal salt solution, with the patient in the Fowler position, I have never tried, but in the next case which presents itself, I am going to do so.

DR. J. F. KUHN, Oklahoma City: If in a community not larger than Oklahoma City I can treat a series of twenty-eight cases with the treatment I have outlined without a failure, Dr. Griffith and others can certainly achieve the same results in the larger communities in which they practice. I hope they will try the method.

(*To be continued*)

PHILADELPHIA COUNTY MEDICAL SOCIETY

Regular Meeting, held Sept. 28, 1910

The President, DR. HENRY LEFFMANN, in the Chair

Ehrlich's "606" in Syphilis

DR. HENRY W. CATTELL: I shall simply speak to-night on the technic used in Wechselmann's wards of the Virchow Hospital in Berlin for the treatment of syphilis with Ehrlich's "606," and make no attempt to review the rapidly increasing literature on this subject. Toward the end of July, I saw five injections given and had the opportunity of examining about 100 patients in all so treated. Our knowledge in regard to syphilis has been increased by: (1) the discovery of the active agent, by Schaudinn and Hoffmann; (2) the diagnosis of the poison by means of the Wassermann reaction, or one of its various modifications; (3) the inoculation of apes, rabbits and guinea-pigs with syphilis. The capsule containing the yellowish compound, dioxydiamidoarsenobenzol, is broken and collected in a sterile mortar, and dissolved in from 1 to 2 c.c. of concentrated sodium hydrate. Methyl alcohol is no longer employed. After solution has taken place, the preparation is again precipitated by the addition of glacial acetic acid. From 15 to 20 cm. of sterile water are added, and the whole centrifugated, the supernatant water poured off, more water added, and the whole brought to neutral by the addition of either a decinormal solution of sodium hydrate or of a 1 per cent. solution of acetic acid. The dose used at the time I was in Berlin was from 0.5 to 0.6 gm. for an adult and 0.025 gm. for an infant. The preparation is injected in a large syringe beneath the scapula, in an area which has first been painted with iodin. One of the strong reasons for choosing the subscapular region is that, in case of arsenicalism, the location is easy of access surgically. A lump is formed which requires some time to disappear. The injections are sometimes followed by pain, fever or malaise, immediately afterward, or coming on after several days. The oldest case of inoculation is now between 11 and 12 months, and Ehrlich must have now nearly 8,000 records, with 7 deaths. It is

marvelous to see a patient come into the wards with pronounced evidences of the disease, and to observe the immediate improvement after treatment. The spirochetes begin to disappear the first day, and in from 48 to 72 hours they are no longer to be found. The Wassermann reaction may, however, remain positive for several weeks. A test similar to that employed in the Calmette or von Pirquet reaction must always be made to determine whether or not the patient has been treated before by arsenic or is peculiarly susceptible to the drug. Ehrlich insists that everybody, before being inoculated, should have the eyes examined and that the physician should ascertain that there are no complications, like grave heart or kidney disease present. This mode of treatment has been carried out by the best observers that Europe affords, and has been undertaken under control conditions, such as have never existed before. The results so far have been astonishing, though I saw three patients in Wechselmann's hands who had returned for a second treatment. The reason given for this was that theirs were some of the earlier cases, in which too small a dose had been administered.

DISCUSSION

DR. L. JAY HAMMOND: Is the preparation used in cases of definite lesions of syphilitic origin, especially in lesions of the central nervous system? My impression has been that Ehrlich advised against its use when such lesions were present, even though there was other evidence of syphilitic conditions.

DR. CATTELL: The users of this remedy are so enthusiastic that they advise it in practically every case. In one of the wards there were no less than ten syphilitic babies suffering from every manifestation of inherited syphilis.

SYMPOSIUM ON HOME TREATMENT AND MANAGEMENT OF TUBERCULOSIS

Home Treatment of Tuberculosis

DR. H. R. M. LANDIS: The necessity of home treatment becomes apparent when we realize that fully 95 per cent. of tuberculous patients must be treated in their homes at least some time during the course of the disease. Home treatment cannot be applied in every case. Simple as the requirements are, we must at least be sure of these if the treatment is to be successful: First, the patient must be willing to obey instructions faithfully; second, he must be able to obtain sufficient aid to get proper food and to be at rest, and third, the home itself should be hygienic. The advantage of home treatment lies in the fact that an individual who has recovered in the locality, and under the conditions in which he will continue to live, is more apt to remain well. The underlying principles in the treatment of tuberculosis are the same, no matter whether applied at the sanatorium, in a health resort or in the home. If there is any difference, it is in the strict attention to details which are so necessary in the home treatment of tuberculosis. Here nothing can be left to chance. What the patient learns he learns from the physician and the visiting nurse, not from the routine practice of the sanatorium. In addition to medical treatment, the problem is a hygienic, a social and an economic one, and all these factors should receive attention.

Rest, Exercise and Food in Tuberculosis

DR. A. P. FRANCINE: In the management of this disease nothing is more important than the proper adaptation of rest and exercise to the individual case. The importance of rest is generally understood; it is the strong arm of the treatment, and is the best agent in combating symptoms. In all moderately advanced cases in which there are fever, rapid pulse, cough, etc., the patient should be confined to bed until these symptoms are relieved. Most patients are better off for a preliminary rest cure, and in the beginning of treatment, even in incipient cases, the individuals should take as little exercise as possible. In poor patients, the necessity of earning a livelihood is an almost insurmountable obstacle to the rest cure, and for this reason such patients should be sent to a sanatorium or infirmary. In chronic cases in which the patients have no fever or increased pulse rate, but suffer every morning with a coughing spell which may cause vomiting, it is advisable for them to stay in bed till after this attack is over. They should then eat breakfast in bed and after that rest for an hour or two before getting up. Properly regulated exercise is valuable during convalescence, and this point should be emphasized, as there is a tendency to overdo the rest cure. Neglect of exercise is especially liable to occur in sanatorium treatment; it is true that there is a growing tendency to make patients take graduated exercise, but in most instances it is incomplete or ineffectual. There is too general a fear of producing attacks of auto-intoxication, and too great a desire to maintain the patient's weight at the highest point possible. Increase in weight is apt to be looked on as the index of improvement; in a measure this is true, but the individual's strength and endurance must also be developed. The final object of treatment must not be lost sight of; that is, not to make the patient stay well under ideal conditions, but to fit him to lead a life of reasonable activity and usefulness. If this treatment is properly carried out, the patient should be able, if necessary, to go back to the old environment and employment and remain well. The system of graduated labor carried out at the Brompton Hospital Sanatorium is to be highly commended. The patients are nearly all doing outdoor work in the fields and gardens. The work is harder than anything most of them had ever done before, but they all look and feel well. If a patient has a reaction he is put to bed at once and is compelled to remain absolutely still; as soon as he is able to be up again, he is put back at the same work.

In the matter of food, the home treatment of tuberculosis resolves itself into a matter of domestic economics. Strictly speaking, it is a social and economic rather than a medical problem. With the average type of poor consumptive, the food question is a very serious one; it may be considered under the following phases: (1) The cost of food; how can we feed a family properly on five or six dollars a week for food? (2) The choice and selection of foods among the poor and ignorant. (3) The preparation of the food. No class of people lives so extravagantly as the very poor. Their means make it impossible for them to buy in quantity, and their ignorance renders them unable to buy intelligently. While in the aggregate they spend what would be enough money to heat their houses well and cook their food properly, yet two-thirds is wasted. Food is selected which will require the least cooking or which may be easily cooked, as, for example, by frying. They never bake, but buy baker's bread. Vegetables are little used on account of the trouble of cooking, and this applies also to cereals. Pickles and jellies are much used, often at every meal. Tea and coffee are frightfully abused, children often being sent to school without any other breakfast. All these problems could be solved if there existed in connection with philanthropic agencies, and particularly in connection with tuberculosis dispensaries and diet kitchens, where patients could be sent to learn how to economize in the choice and selection of food; where they could learn the simpler rules of cooking, and could be instructed in the use of the fireless cooker, and where the supervision of the physician could be supplemented by easily learned facts in regard to habits of eating.

Ultimate Results in the Treatment of Pulmonary Tuberculosis with Mercury Succinimid

This article, by Dr. H. J. Hartz, appeared in full in THE JOURNAL, Sept. 10, 1910.

Discussion on Tuberculosis

DR. LAWRENCE F. FLICK: The home treatment of tuberculosis contains really almost all of the essential features of the sanatorium treatment of tuberculosis—complete control of the patient; the greatest amount of comfort of life; the best and largest amount of food and the greatest freedom from worry. It is my experience that these essential features can be accomplished better in the home than under what is called climatic treatment. We should bear in mind also that

something can be done by medication. Too much stress has been laid on hygiene, rest and climate, without any regard to medication. Fresh air is good, but we may go to extremes in insisting that the patient must sleep out of doors. That is ideal, but for practical purposes, a room with windows on two sides, with the bed near the open window, is sufficient, if everything else is right. The most important one factor in the treatment of tuberculosis is a proper food supply, of the kind which is adapted to the individual. I believe that we should select carefully the diet of each patient, adapt that diet to the capacity of the individual to digest the food, and watch closely whether we have the right diet by the weight. There does not need to be a fabulous increase in weight, but there must not be much decrease below the normal. As a general proposition, I would lay down the rule of one solid meal, three quarts of milk and six eggs a day, as the place to start from. This diet can be varied one way or the other. The prevention of reinfection is an important element in treatment too often forgotten. It should be remembered that, as a rule, there is no complete immunity against tuberculosis. Exercise, though a valuable asset, is sometimes a dangerous one. When in doubt as to its value, it is safe to maintain complete rest. Exercise can be used profitably provided it is graduated. Graduated exercise, I may say in this connection, did not originate at the Brompton Hospital at Frimley, but at White Haven. Severe coughing is frequently due to an overloaded stomach and indigestion, and these attacks may often be avoided by regulation of the diet.

DR. WILLIAM G. TURNBULL: Public education has reached such a point that there is little difficulty in dealing with tuberculosis among the wealthy classes. In the treatment among the poor it is important that we adapt ourselves to their circumstances rather than try to reach ideal conditions. Only by understanding the home life of these people, as Dr. Landis and Dr. Francine pointed out, can we hope to help them. We must find out what a patient can do, learn for ourselves the prices of articles of diet, their food values, and how they should be cooked. If then we give this information intelligently our patients will follow directions.

DR. MYER SOLIS COHEN: If a small portion of the many acres of Fairmount Park could be set apart for a public tuberculosis camp, much of the difficulty in the home treatment of tuberculosis could be overcome. There would be practically no expense to the city; the camp could be placed on the line of the park trolley; the Red Cross Society or other agency would probably furnish reclining chairs, etc. The Board of Health, of course, should have charge of such a camp.

DR. A. B. HIRSH: In connection with the outdoor treatment of tuberculosis, two facts stand out in regard to the building of houses: In the Latin countries we find verandas on the second and third floor, and the part of a house which faces the prevailing winds stands back 10 or 15 feet from the first floor. In Philadelphia, much good could be done through the newspapers by urging builders to change their architecture and follow to some extent this method. Builders should be told that the streets between the main streets along which they put their double rows of two-story houses should run east and west, so that the prevailing winds should be of use to the families. Another advantage noticed in the buildings in Europe is the French window, which not only gives fresh air but adds to the esthetic appearance of the room.

DR. JOHN H. MUDGETT: In addition to hygienic treatment of tuberculosis, I use tuberculin, and I have had very good results.

DR. ALBERT P. FRANCINE: I consider Dr. Hartz's results important, because they have the effect of checking the use of mercury as a therapeutic agent in tuberculosis. Personally, I have felt that there was just enough plausibility in Dr. Wright's theories to be likely to deceive, and I have further felt that the probability of syphilitic infection in his cases was one of the probable sources of error in regard to his own views on the efficacy of mercury. I would not say that in so far as syphilis may be a factor in a given case mercury may not do good. However, I have had a number of tuberculous patients who gave a markedly positive Wassermann reaction, but who were without tangible syphilitic symptoms, and whom I have treated with mercury without any apparent benefit. I wish that Dr. Wright might be here to speak for himself, because there seems to be an element of unfairness in criticising a man's work in his absence. I think, however, that Dr. Hartz has made a strong case, and in so far as it should combat what might prove to be a serious fallacy in the treatment of tuberculosis, I endorse every word of it and congratulate him heartily on his careful work.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

October 15

1 *Management of Poliomyelitis and Its Sequelæ. H. L. Taylor, New York.
2 *Bacterial Vaccines in Treatment of Diseases Among the Aged. H. A. Craig, New Brighton, S. I., N. Y.
3 Complement-Fixation Tests in Thromboangiitis Obliterans. L. Buerger and D. J. Kaliski, New York.
4 Relative Value of Symptoms, Physical Signs, Tuberculin, and the Roentgen Ray in the Diagnosis of Tuberculosis. H. F. Stoll, Hartford, Conn.
5 Ehrlich-Hata "606." A. L. Wolbarst, New York.
6 Three Cases Treated with Antigonococcus Serum. M. Zigler, New York.
7 *Fracture of the Pubic Bone. T. Abbe, Washington, D. C.

1. **Management of Poliomyelitis.**—Taylor thinks that time is wasted in treating anterior poliomyelitis with massage and electricity. The prevention of deformities and their correction is of the utmost importance. After deformity has taken place it is important to correct it by apparatus and operations. Improvement may be obtained even in cases of long standing by these measures, and a fair amount of motion obtained by careful balancing of the muscles.

2. **Treatment of Diseases Among the Aged.**—Craig reports 19 cases of various kinds in persons from 60 to 85 years of age in whom reactions were obtained to vaccines, chiefly of the streptococcus and staphylococcus. The mortality in spite of vaccines was 13 per cent.; 13 per cent. of deaths were from cancer.

7. **Fracture of the Pubic Bone.**—In the case reported by Abbe, a fracture of the pubic bone on the left side was caused by a fall on the hip. The diagnosis was confirmed by Roentgen-ray examination. The symptoms were inability to turn over in bed, or to move the left leg fully from the hip, with tenderness over the ramus of the pubes on the left. Pressing together the great trochanters or the iliac crests caused pain in the pubes. Strapping the pelvis with an encircling band gave comfort and enabled the patient to turn in bed and to move the leg better. The patient recovered with good gait.

Boston Medical and Surgical Journal

October 13

8 *Acute Thoracic Empyema. Avoidance of Chronic Empyema. Rib Trephining for Suction Drainage. S. Robinson, Boston.
9 Scoliosis. E. H. Bradford and R. Soutter, Boston.
10 Absorption of Fat and Protein in Pulmonary Tuberculosis. A. E. Austin, M. Ordway and R. Montague, Boston.
11 *Test for Diarrhea Caused by Gas Bacillus. A. I. Kendall and R. M. Smith, Boston.
12 Two Cases of Common Speech and Voice Defect and Their Treatment. A. Myerson, Boston.

8. **Acute Thoracic Empyema.**—Cases of purulent pleurisy are divided into three classes by Robinson: Acute, subacute and chronic. Suction or siphon drainage aids in the reexpansion of the lung in all cases of the first group; in most of the second, probably in none of the third. Suction even though inefficient is better than no suction, provided suction is constantly applied. Prevention of leakage requires above all things an air-tight thoracotomy wound. This is best obtained by the rib-trephining method with the application of a threaded metal tube. The particular form of suction device applied to the air-tight wound will depend on the means at hand.

The importance of maintaining air-tight suction leads Robinson to advocate a method of rib-trephining, which he has employed in cases belonging to the first and second groups with greater success than with any of the other methods. He advocates local anesthesia, except in nervous patients, to whom it is not suitable. When first employing this treatment, after trephining the rib, he inserted a rubber tube selected to fit as tightly as possible, holding it in position by adhesive plaster and safety-pin or with a stitch through the skin. This prevented leakage for a number of days and was a great improvement on all other methods employed. Even this leaked too early, and to prolong the period of air-tight closure Robinson substituted a metal tube with a thread cut on one end and corrugated for the attachment of rubber tubing on the other. These tubes are made in different sizes and of different lengths to suit the individual case, depending on the size of the rib and the depth of the chest wall tissues to be traversed. The less the tube projects beyond the skin, the better, as it receives better support by the soft tissues and the skin. It is not necessary to allow the corrugated portion to project beyond the skin sufficiently to support the end of the rubber tubing, for this may be applied to a depth within the soft tissues before the latter are sutured around it.

The skin is anesthetized, incised for two inches over the selected rib, dissection is then carried on under further local anesthesia. With gentle retraction of the edges of the wound an anesthetic compress is applied to the periosteum with pressure for at least 30 seconds; this membrane can then be scraped away for a length of 2 cm. without causing pain. A cranial trephine of the exact outside diameter of the tube to be inserted is then applied directly over the center of the rib. Care should be taken to leave a bridge of rib at least 3 mm. in width above and below the trephine opening. When it is evident that the posterior periosteum is reached at any point in the trephine's circle, the needle should be inserted in the crack and the periosteum and over-sensitive pleura anesthetized, even if the solution is allowed to leak into the pleural cavity. Traction on the pleura caused by removal of the button is thus rendered painless, as is also exploratory puncture. After removing the button with mouse-tooth forceps, a Cabot trocar should be inserted into the pleural cavity to verify the selected point of drainage. This should be done with caution so that only a drop or two of pus escapes and does not come in contact with the superficial tissues. One of the metal tubes is then screwed with the fingers into the trephine opening. The muscles and skin, which should have been spared infection, are now sutured. A collodion dressing with a circular opening is then applied, and with the wound thus protected the complete opening of the pleura is indicated. This can best be done by the use of a pointed or blunt bistoury or a long-bladed scalpel, which is passed through the metal tube to the pleura. Great care should be taken to do more than merely incise the pleura, the knife being used for the purpose of excising a section of pleura the size of the tube. During this process, pus, of course, escapes freely, but runs directly into a basin and need not come in contact either with the skin or sterile sheet or even drench the floor. A rubber tube about 6 inches in length with a clamp at its outer end is then slipped over the corrugated portion of the metal tube and tied. No outside dressing or swathe is needed, and after sufficient removal of the pus contents at the time of operation the clamp is reapplied to the rubber tube and the patient sent to the ward.

11. **Test for Diarrhea Caused by Gas Bacillus.**—In order to throw light on the distribution of the gas bacillus in the stools of children with diarrheal diseases, Kendall and Smith have utilized the abundant material in the Boston Floating Hospital. The method employed in detecting the gas bacillus is simple, rapid and certain. It consists essentially in inoculating sterile tubes of whole milk with a small portion of the suspected stool, thoroughly emulsified in it, and immersed in a water bath to above the level of the top of the milk and heated to 80 C. for 20 minutes, incubating at body temperature for from 18 to 24 hours. As an alternative procedure, the infected milk tube may gradually be brought to the boiling point of water in a water bath, kept there for 3 minutes, then incubated as above. By so doing, all bacteria not in the spore state are killed, and the development of the spores into vegetative cells is unrestricted by the presence of non-spore-forming organisms. Those cultures containing gas bacilli present at the end of the period of incubation three prominent features: (a) The casein is largely dissolved (usually at least 80 per cent.); (b) the residual casein is slightly pink in color and filled with holes, the result of the stormy fermentation; (c) the culture smells strongly of rancid butter, due to the formation by the gas bacillus of butyric acid. Gram-stained preparations made from such growths show rather thick, short bacilli with slightly rounded ends. Controls suitably studied culturally have shown that cultures presenting this complex are in reality gas bacilli.

The authors have examined by this method the stools from 231 infants presenting a variety of intestinal disturbances and a few other diseased conditions. It was possible to isolate the gas bacillus from 22 cases. Six of these infants had apparently normal stools; 2 had thin watery stools with a few curds and a little mucus; the remaining 14 showed blood and mucus and many of them pus in the stools. The clinical diagnosis in these 14 cases was uncertain, but suggested bacillary dysentery. It was not possible in any case in which the gas bacillus was recovered from the stools to isolate simultaneously the dysentery bacillus. The diagnosis of diarrhea due to an infection with the gas bacillus can be made by the means described within 24 hours, at the end of which time it is possible to begin treatment with a definite idea as to the etiology of the condition. The management of all acute diarrheas during this period of 24 hours while the cultures are developing and while the diagnosis is being made, is practically the same, namely, purging and starvation. So far, the application of the method as outlined and the subsequent treatment with buttermilk has been limited to relatively few cases, but the results obtained have been uniformly satisfactory and would seem to justify the belief that the gas bacillus is the etiologic factor in a small group of the acute diarrheas in infants.

New York Medical Journal

October 15

13 The Mechanicobiologic Standpoint in Medical Problems. J. Wright, New York.
14 *Nervous Affections in Relation to the Adjustments of the Eyes. G. T. Stevens, New York.
15 *Comparative Value of Different Methods of Cancer Treatment. J. W. Vaughn, Detroit, Mich.
16 Autogenous Vaccine Therapy in Acute and Chronic Otitis Media. S. J. Kopetsky, New York.
17 Phenol Poisoning. C. B. Burke, Atlantic, Iowa.
18 Fifteen Cases of *Hymenolepis Nana*. C. C. Bass and J. M. Gage, New Orleans.
19 Intimate Relations Which Hospitals Bear to Public Health. H. W. Austin, Stapleton, N. Y.
20 Hypopituitarism. E. S. Cross, Savannah, Ga.
21 Hyperchlorhydria Apparently Relieved by Use of Prisms. C. J. Astle, New York.

14. **Nervous Affections in Relation to Adjustments of Eyes.**—Stevens presents a short series of studies of nervous affections in their relations to the adjustments of the eyes, the studies being based each on a single case of sufficient importance, observed with reasonable care, and sufficiently well defined in its character to afford opportunity for observing not only the phenomena, but the course of treatment and the results of such treatment. Such a series of studies would appear to be of more value than conclusions derived from a number of isolated and, perhaps, not fully correlated facts and surely of more value than attempts to theorize from principles which might or might not apply to the cases. The first study was made on a case of chronic progressive chorea. The boy was 16 years of age, was of about the usual height for his age, but was quite thin and pale. He was 3 years old before he walked, but when he was only 2 years of age he began to manifest the twitchings of chorea to a moderate extent. At the age of 6 the convulsive movements were very bad and his head tipped from side to side. As he grew older and somewhat stronger there were times when he was sufficiently quiet to attend school for a week or for 2 or 3 weeks at a time. He was an apt pupil and seemed to keep well along, though what he learned seemed to be more by the

ear than by the eye. At the age of 9, by the advice of physicians, he was removed from school and since that age he had never attended any school.

The nervous condition was manifested by a stamping of the heels against the floor, the clapping of the hands, the striking the head in its bobbing between the knees and up again, of the ejaculatory sounds. As he walked he stopped once in a few steps and gave a jerk of the shoulders backward and of the abdomen forward, making at the same time one of his characteristic sounds. His face was in perpetual motion and his body was never still. Occasionally as he walked he stopped for a general convulsive attack of a much more violent character than that just mentioned. Vision of each eye 6/6, right without glass, left with cyl. + 1.25 axis 90°. Hyperphoria=0; esophoria=16°, deviation in exclusion corresponding to the esophoria shown by the phorometer. Rotations were all free and normal, but the rotation upward of 42° was in excess of the most favorable rotation in that direction. Declinations, right+1°, left+6°. The boy could see single, but images were confused when both eyes were open and the interposition of a faintly colored glass before either eye induced diplopia.

The correction of the declinations was the aim of all the efforts to correct the adjustments. No treatment was instituted directly against the esophoria, for in case the declinations could be corrected there was no reasonable doubt that the esophoria would correct itself. The treatment was surgical, consisting of operations to which Stevens has given the somewhat contradictory designation of "extendocontraction" of a tendon.

The time of observation of this case was rather more than a year, during which there was, at first, a rapid and then a steadily progressive improvement. While during the early weeks of treatment, moderate nervous attacks occurred from time to time, as the months progressed these days of restlessness became progressively less frequent until during the last few months no return of the malady was observed. A year later he was well, and later than that he was well and at work.

15. **Treatment of Cancer.**—Vaughn has made daily differential counts in 25 patients with various forms of cancer who were receiving injections of cancer residue. Within from 24 to 48 hours following a residue injection the percentage of polymorphonuclear elements falls from 5 to 40 per cent., while there is a corresponding increase in the percentage of mononuclear cells. These observations, when compared with the blood changes found in connection with the administration of cancer residue, are of particular interest, since the type of mononuclear cell which is found to take part in the most decided increase is the myelocyte, with a fairly dark staining nucleus surrounded by a larger amount of protoplasm than is found in the small mononuclear cell. Also the protoplasm of these cells seems to contain, in most instances, a greatly increased number of azure granules. The temporary conclusion that must be drawn from the blood changes noted is that the specific ferment which destroys the cancer cell is in all probability formed through a chemical reaction with the cells of the mononuclear variety.

Lancet-Clinic, Cincinnati

October 8

22 Physical Forces in Tuberculosis. C. Pope, Louisville, Ky.
23 Simulation of Hysteria. T. A. Williams, Washington, D. C.
24 Water the Main Factor in the Prevention of Disease. J. C. Minor, Hot Springs, Ark.

Journal of Medical Research, Boston

October

25 *Reaction Curve of Human and Bovine Type of Tubercle Bacillus. T. Smith, Boston.
26 *Relative Importance of the Bovine and Human Types of Tubercle Bacilli in the Different Forms of Human Tuberculosis. W. H. Park and C. Krumwiede, New York.
27 *Phenol as a Clearing Agent. L. M. DeWitt, Ann Arbor, Mich.
28 *The Viscosimeter as an Aid in the Detection of Liquefying Bacteria. J. C. Torrey, New York.

25. **Reaction Curve of Human and Bovine Type of Tubercle Bacillus.**—In several earlier publications Smith described a culture method for distinguishing the bovine from the human type of bacillus, which consists in determining from time to time, over a period of from three to four months, the reaction of glycerin bouillon in which tubercle bacilli are growing. The curve resulting from such determinations can be plotted and it presents certain characters which under like conditions remain fairly constant for each culture. Several other investigators have applied this method in their studies of tubercle bacilli from human and animal sources. Their results impressed on Smith the desirability of going over the method again and determining more precisely the conditions which make uniform results possible. He therefore collated the new data obtained during the past two years and used these as a basis for further investigation.

He says that experience has taught him the need of applying certain uniform methods in following the reaction curve. In the first place, the depth of the bouillon and the size of the flask should be the same for all comparative tests. The amount of glycerin used also tends to modify the result. To make conditions uniform the glycerin should be entirely consumed or else a certain amount should remain unused. The initial reaction of the bouillon probably does not greatly influence the curve if the acidity be maintained within 1 to 2 per cent. of a normal acid. Great care must be exercised not to use figures obtained by titrating fluids from contaminated flasks. The faintest cloudiness of the fluid is suspicious. The question toward which nearly all the data tend is whether the process indicated by the reaction curves of the two types of bacilli are qualitatively identical or not.

In a former communication Smith endeavored to explain the differences in the reaction curves by assuming that the bovine bacillus utilized the glycerin without splitting it into acids, whereas the human type first split into acids. This explanation was not accepted by Griffith nor by Siebert, who regard the behavior of both types toward glycerin as the same. That the behavior is not identical is evident from the data Smith presents, but whether it is variable, inconstant and the resultant of essentially the same functional activities of the two types cannot be determined until much more work has been done. When cultures have been recently isolated, the difference in behavior of the two types is striking. With the continued artificial cultivation the bovine strains grow more abundantly and the reaction after two or three months becomes acid. Within this period the difference between the bovine and the human type is marked even in old cultures. After three months the culture fluid of many bovine strains is from 0.5 to 1.5 per cent. acid. It still remains to be determined whether this acidity coming on so late is not wholly to be ascribed to disintegrative changes. Smith says that the original distinction made by him will stand until overthrown by more thorough, analytic studies than have been made up to the present.

The reaction curve of tubercle bacilli in glycerin bouillon has proved of great value to Smith in studies of tubercle bacilli. Among the criteria for distinguishing the bovine and human type of bacilli, such as slow or rapid growth, high or low virulence for rabbits, Smith regards the difference in the reaction curve as the most interesting and at the same time the most puzzling phenomenon. It is closely bound up with vital processes of this species of which we know as yet very little. All claims of transformation by passages of the human into the bovine type, or *vice versa*, must, in Smith's estimation, pass the test of the reaction curve as well as others before such transformations can be accepted as accomplished facts.

26. **Bovine and Human Types of Tubercle Bacilli.**—This article covers 160 pages, and is based on a large amount of personal observation and experimentation, the data in each instance being carefully recorded and fully discussed. It is impossible to abstract the paper, valuable though it is.

27. **Phenol as a Clearing Agent.**—DeWitt says that monophenol which fades the stains commonly used in histologic work, can be corrected by redistilling, stopping the distillation as soon as the temperature begins to rise above the constant boiling point of the phenol. The substances passing over at a lower point are not injurious to the stains. If

redistillation is not convenient, the carbol-xylol which fades the stains can be corrected by supersaturating it with a mixture of sodium bicarbonate, one part, and sodium-potassium tartrate, two parts. Often the sodium bicarbonate alone will correct it. It may also be partially corrected by the addition of from 0.5 to 1 per cent. of pyridin.

28. **The Viscosimeter.**—It seems probable, according to Torrey, that with the aid of the Oswald viscosimeter the test for the liquefaction of gelatin on the part of bacteria may be reduced from 14 days, as at present, to 4 or 5 days. If this statement proves valid, a definite report on the presence of *B. Coli* in a sample of water may be given within a week instead of after two weeks as at present. Cultures which liquefy very slowly and at the same time produce a viscid substance may be unsuited for the test. As an aid in the biometric study of bacterial liquefaction this apparatus should prove of value.

Medical Review, St. Louis

September

29 Eradicative Treatment of Syphilis. J. Dardel, Aux-Lesbain, Savoie, France.
30 Myofibroma of the Bladder Simulating a Uterine Myofibroma. A. H. Levins, Milwaukee, Wis.
31 Cystoscope and Urethral Catheter. A. W. Abbott, Minneapolis.
32 Closure and Drainage Following Supra-Pubic Cystotomy. C. S. Venable, San Antonio, Texas.
33 Pseudohypertrophic Paralysis. F. L. Christian, Elmira, N. Y.
34 Extraperitoneal Rupture of the Bladder. J. E. Cannaday, Hansford, W. Va.
35 Curative Treatment of Carcinoma, Especially as It Affects the Cervix Uteri. G. G. Hopkins, Brooklyn, N. Y.
36 Pruritus Vulvæ—Its Treatment. T. H. Allen, New York.
37 Glycerin as a Dressing for Prevention of Suppuration. H. Lilienthal, New York.

Long Island Medical Journal, Brooklyn

October

38 An Historical Outline of the Life of Charles Jewett. W. Schroeder, Brooklyn, N. Y.
39 The Brooklyn Hospital. W. H. Cary, Brooklyn, N. Y.
40 Dairy Inspection. H. Moak, Brooklyn, N. Y.
41 Effect of Influenza on the Heart. E. E. Cornwall, Brooklyn, N. Y.
42 *Treatment of Pneumonia in Children. W. D. Ludlum, Brooklyn, N. Y.
43 Id. J. D. Sullivan, Brooklyn, N. Y.
44 Unresolved Pneumonia in a Child Treated by Mixed Vaccines. L. C. Ager, Brooklyn, N. Y.

42. **Treatment of Pneumonia in Children.**—Ludlum emphasizes the importance of fresh air, rest in bed, sufficient clothing to be comfortable, reduced diet. He says that a tepid bath should be given daily to maintain the proper function of the skin. In the early stage counter-irritation may be of value, the best form being the homemade mustard paste. Poultices and clay pastes are positively harmful to the infant and, to say the best of them, of very doubtful value in the older child. They should not be used. Similarly the formerly much-used pneumonia jacket is condemned as useless and harmful. Aside from its use as antipyretic and sedative mentioned below, the local application of cold is at times very valuable; when cyanosis is marked and respiration shallow nothing aids deeper respiration and clears up the cyanosis so well as a cold chest compress. If the fever is giving trouble, hydrotherapeutic measures should be employed. The simplest and, at the same time least effective, is cold sponging. If simple sponging is not adequate, the best way to secure more positive action is by the cold pack, with the greatest emphasis on the fact that coal-tar products are very rarely to be given, though Ludlum says that there is an occasional case in which a small dose of phenacetin works admirably to control fever and restlessness.

At the beginning of an attack, in addition to a cathartic, a refrigerant, such as potassium citrate, in dose of 1 grain to each year of the child's age up to 4, or liquor ammoniæ acetatis, 15 drops at 1 year up to 1 dram at 4, with tincture of aconite from ¼ drop at 6 months to 1 drop at 3 or 4 years, greatly adds to the child's comfort and has some value in reduction of fever. This is usually kept up for one or two days. An average case will frequently require no other medicinal treatment. Stimulants are usually not necessary, and should never be given till the occasion arises. If there is threatened failure of the heart, particularly at the crisis, the best drug is usually strophanthus, given in the form of the tincture, 1 drop for a child of from 6 months to 1 year, 2 drops for a child from 3 to 5 years. Strychnin is occasionally called for in a heart weak and irregular and not very fast. For right heart failure nitroglycerin is indicated. Alcohol, if needed at all, must be used in good-sized doses, in the form of whisky or brandy.

In bronchopneumonia, Ludlum says, poultices, pneumonia jackets and their like are to be condemned, only more strongly than in lobar-pneumonia; for this is typically an asthenic disease and their damage is even greater. On the other hand, counter-irritation in the early stages is of decided value, because its influence is left on the accompanying bronchitis. The mustard-paste is a very satisfactory mode of application. The cold compress to the chest is useful under the same conditions as in lobar-pneumonia, but the child's condition must be watched with even more care; shock must be watched for and the extremities kept carefully warm; its value in selected cases and given with extreme care is very great. Inhalations are of great value while the secretion is still scanty; plain water, lime water or, best, water containing from 10 to 20 drops of creosote or 1 teaspoonful of compound tincture of benzoin to the pint. The inhalation cannot be given with full satisfaction except under a tent, but there is some value in the free escape of medicated steam in the room. After free secretion has been established the inhalations are of no further use. A full sponge bath may be given daily for cleanliness and to keep the skin active. Hydrotherapy should be carried out just as in the lobar type, tepid or cold sponging or the cold pack; watch carefully for shock or cold extremities. Laxatives should be employed as needed, but the initial cathartic is not a routine measure as in the lobar form.

Expectorant drugs, so called, are of value because of the bronchial irritation. Ludlum most commonly employs ipecac in doses of 2 drops of the syrup for a 1-year-old child, from 3 to 5 drops for a 5-year-old or upward; with ½ grain of ammonium chlorid for the younger age, 1 grain for the elder; in these doses the stomach is rarely deranged. If cough is very distressing and unproductive, he uses codein 1/30 grain, or Dover's powder ¼ grain for a child of 1 year. After secretion is well established, if an ammonium salt is still needed to aid in its expulsion, the carbonate is the best and should be given in similar small doses or in the form of the aromatic spirits, from 3 to 5 drops at the age of 1 year, 10 drops at 5 years. Creosote in the form of the carbonate is useful in same cases in the later stages, but Ludlum rarely uses it in children under 4 or 5 years; at this age the dose is 2 or 3 drops. Stimulants are needed much oftener than in the lobar type, but by no means should they be used too early. Strychnin is the best if the pulse is weak and irregular and not particularly fast. If the pulse is rapid, i. e., 150 or more when the child is asleep, strophanthus is indicated, 1 drop at 1 year, 2 drops at 5. Alcohol should be left until late when, if needed at all, the dose required is large, 20 or even 30 drops of whiskey or brandy well diluted at the age of 1 year. In cyanosis, glonoin in dose of 1/200 grain to a 1-year-old child may be of value, and in extremely shallow breathing atropin 1/400 grain for the same age.

Journal of the Kansas Medical Society, Kansas City

September

45 Mediastinal Tumor. J. J. Tretbar, Hudson.
46 The Physician's Connection with Pharmaceutical Houses. R. R. Riley, Benedict.
47 Effect of Disturbances of Glands Having Internal Secretions. F. H. Slayton, Wichita.
48 Is Insanity on the Increase? J. N. Hill, Osawatomie.

October

49 *Radical Cure of Inguinal Hernia. G. M. Gray, Kansas City, Kan.
50 Review of Recent Literature on the Relations Between Diabetes Mellitus and Pregnancy. W. C. Harkey, Kansas City, Mo.
51 Acute Nephritis, a Sequela of Tonsillitis. R. C. Harner, Green.

49. **Radical Cure of Inguinal Hernia.**—Gray believes that with the uniformly good results that are now obtained by operative procedure, that we should advise operation in all cases between 2 and 60 years of age, unless for some very good reason; for example, if the person be suffering from some

chronic ailment, such as diabetes, chronic interstitial nephritis or valvular disease of the heart, when operation, as a rule, should not be considered. All others, as a rule, should be promptly submitted to operation. Even individuals who fear a general anesthetic can be operated on under cocain or other local anesthetic. Further, in view of the uniformly good results and the very small percentage of mortality attending these operations, it would seem utterly absurd at the present time, he thinks, for any physician to advise the young adult or middle-aged man or woman, or even one in youth or old age, to wear a truss, rather than submit to an operation.

Alabama Medical Journal, Birmingham

September

52 Foramitti's "Tubulization" Method of Nerve Suture. G. Torrance, Birmingham.
53 Progressive Therapeutics. J. G. Wilkinson, Ragland.
54 Report of 128 Surgical Cases. W. T. Berry, Birmingham.
55 The Owen Bill and Its Opponents. S. A. Knopf, New York.
56 An Epidemic of Fever Prevailing in Lawrence County (Ala). What Is It? J. W. Fennell, Landersville.

Journal of Cutaneous Diseases, New York

September

57 *Syringoma. O. S. Ormsby, Chicago.
58 Determination of Impetigo Contagiosa to the Mucous Membranes. D. W. Montgomery, San Francisco.
59 Elements in the Prognosis of Acquired Syphilis. E. L. Keyes, Boston.
60 Dermatitis Exfoliativa Treated with Quinin. W. H. Mook, St. Louis.

57. **Syringoma.**—The lesions in Ormsby's case were very extensive. They were situated in greatest abundance over the breasts, arms, forearms, face, eyelids, thighs and legs. On the limbs the extensor surfaces were more considerably involved. The lesions were very numerous over the breasts and over the extensor surfaces of all the limbs. There were, however, many on the flexor surfaces and a few on the back, especially over the buttocks and on the upper part of the trunk around the shoulders. The palms, soles and scalp were free. Some lesions were fairly superficial and flat; others were deeper and not flat; while many were quite deep. Large numbers occurred as discrete nodules; others coalesced and formed lobulated plaques. On the arms the nodules were flattish, yellowish-brown, appearing much like xanthomatous lesions. Similar growths occurred on the forearms, but here many were smaller, having only the normal hue of the skin. On the lower limbs where they were numerous, the color varied; some were bluish-red, brownish-red or yellowish-red. In general, much more color was exhibited here than elsewhere. Over the breasts the color was pinkish and darker red. Over the neck and face large numbers were colorless. On the eyelids much deformity was produced by the protuberance of the nodules. Here some appeared translucent and some resembled fibromata.

Radiotherapy moderately applied caused appreciable diminution in the size of the lesions. Several of the latter, treated with a ten-second exposure to carbon-dioxid snow, completely disappeared. Apparently, they were especially susceptible to each of these forms of treatment. The wounds made by biopsies healed readily by primary intention. The lesions were much more extensive than in any previously recorded case, though the individual lesions are similar in many respects to those described in connection with cases of syringocystoma group. Histologically, the sections show the most marked pathologic changes at all times in the region of the sweat ducts, and strong presumptive evidence is obtained from the sections that the new growth is a proliferation-product of the cells of these ducts. A connection between the cells of the hair follicles or of those of the epidermis with those of the new growth could not be demonstrated, nor was it suggested.

Virginia Medical Semi-Monthly, Richmond

October 7

61 Acute Cerebral Compression. Report of Cases. H. S. MacLean, Richmond.
62 *Social Aspect of Gonococcus Infection of the Innocent. W. A. N. Dorland, Chicago.
63 Gonococcus Infections in Women. H. O. Marcy, Boston.
64 Intubation for Relief of Stenosis in Laryngeal Diphtheria. P. D. Lipscomb, Richmond.

62. Abstracted in THE JOURNAL, July 16, 1910, p. 244.

Denver Medical Times and Utah Medical Journal

October

65 Ehrlich's New Remedy, "606," for Syphilis. Z. von Dworzak, Denver.
66 Id. A. J. Markley, Denver.
67 *Amputation of the Epiglottis in Laryngeal Tuberculosis. L. B. Lockard, Denver.
68 Is Syphilis a Contagious Disease? F. Clift, Salt Lake City, Utah.

67. **Amputation of the Epiglottis.**—Extensive studies on the living and dead have shown that approximately one-third of all consumptives have, in greater or lesser degree, coincident involvement of the throat, and statistics prove that in over 20 per cent. of the laryngeal cases the epiglottis is involved. Lockard has had 961 cases of laryngeal tuberculosis, in 136 of which there were lesions of the epiglottis. Of 1,671 patients with lesion of the larynx, 127 had lesions of the epiglottis. In 4 cases, the laryngeal disease was limited to the epiglottis. Epiglottidean tuberculosis is practically always associated with advanced disease of other segments of the larynx and of the lungs, and to this fact, in large measure, Lockard says, can be accredited its appalling mortality, for even if the epiglottidean disease were capable of arrest or cure, the patient would usually succumb to these concurrent processes. Even when the pulmonary and other laryngeal foci are incipient or quiescent, their advancement is rapid after breaking down of the epiglottis, for the severe dysphagia and resultant cachexia soon destroy what little vitality the tissues have retained, and these conditions have generally supervened by the time the case comes under observation.

From such statistics as are available, it would seem that the general mortality of these cases, including both the incipient and the advanced, is in the neighborhood of 90 per cent. If one took into account the advanced cases only, those associated with severe dysphagia, it would be found that not more than 1 or 2 per cent. result in local healing. In addition to the failure to cure or even temporarily to arrest the process, little is achieved in the way of relief. Any method of treatment, therefore, that offers some hope of local cure in favorable cases, and promise of euthanasia in the incurable deserves serious consideration, and such a method Lockard thinks we possess in complete amputation. Of the 27 patients operated on by the author, 26 were completely relieved of pain; in 8 the larynx was cured, and in 5 the pulmonary process eventually became quiescent; 3 patients are still under treatment. In one case the palate was also involved, but even in this instance deglutition was greatly facilitated. Of the cured patients one has endured 5 years and 6 months, and one 4 years and 8 months.

Journal of the Delaware State Medical Society, Wilmington

October

69 Puerperal Insanity. T. H. Davies, Farnhurst.
70 Mysticism in Medicine. W. H. Kraemer, Wilmington.

Southern Medical Journal, Nashville, Tenn.

September

71 *Diagnosis of Surgical Lesions of the Kidney. L. Frank, Louisville, Ky.
72 Post-Rectal Dermoids. T. L. Driscoll, Cartersville, Ga.
73 Acute Anterior Poliomyelitis. A. W. Harris, Nashville.
74 *Penetrating Wound of the Right Ventricle. W. M. McCabe, Nashville.
75 Hay Fever. V. Gibbs, Chattanooga.
76 Recent Consideration of the Duodenal Ulcer. A. W. Calloway, Asheville, N. C.
77 *Hemorrhagic Form of Appendicitis. G. Torrance, Birmingham, Ala.
78 Physical Signs in Incipient Pulmonary Tuberculosis. W. A. Oughterson, Nashville.
79 Syphilitic Gumma of the Bladder. W. Lenehan, Nashville.
80 Bismuth Poisoning. G. B. Lawson, Roanoke, Va.

71. Abstracted in THE JOURNAL, Oct. 1, 1910, p. 1220, and published in the *Lancet-Clinic*, Sept. 24, 1910.

74. **Wound of the Right Ventricle.**—The patient, a negress, aged 18, received a knife wound which entered one inch to the left of the sternal margin, and traveling beneath the skin, partly severed the costal cartilages of the fourth and fifth ribs, about half an inch to the left of the sternal edge. Entering the pericardial sac between the fourth and fifth cartilages, it penetrated the right ventricle near its center. The wound in the pericardium was just large enough to permit the tip of the index finger to enter, but did not allow

it to penetrate into the pericardial sac. The patient entered the hospital fifteen minutes after the injury, profoundly shocked, pulseless, and with a temperature of 97 F. The external wound was dry, and no perceptible hemorrhage was present. Percussion was performed with difficulty, because of the pain and restlessness of the patient, but it was thought that pericardial dulness was increased. The heart sounds could not be heard, nor could the apex beat be seen. She was placed in bed, surrounded with hot-water bags, and given morphin. Soon a faint pulse could be detected, and at 7:30 p. m., with a pulse of 160, and of fair volume, operation was advised and accepted. The original wound was enlarged and the fourth cartilage completely severed in the original knife wound and fractured distally. Blood was then spurting from the pericardial opening at each systole. The opening was quickly enlarged and the index finger of the left hand thrust into the opening to the right ventricle. A catgut suture was placed at the side of the finger and traction on this controlled the hemorrhage to some extent. In this manner the triangular stab in the ventricle was closed. Clots were removed from the pericardial sac by sponging and with the hand. A tube was placed in the sac and the opening sutured with a continuous catgut suture.

On the day following the operation a pneumothorax was detected and aspirated. The lung descended, but contained moist râles. On the fourth day the opposite lung became involved and moist râles appeared. The patient continued in this condition, with pulse ranging from 100 to 120 per minute and temperature registering from 99 to 101 F., until the night of July 21, seven days after the operation, when she died.

77. **Hemorrhagic Form of Appendicitis.**—In the cases cited by Torrance, the only abnormal condition found in the appendix was blood with organized clots, some of which were attached to macerated points of the mucous membrane of the proximal end of the appendix.

Albany Medical Annals

October

81 Experimental Pathology of the Stomach. O. Cohnheim, Germany.
82 Limitations of Laboratory Diagnosis. T. Ordway, Albany, N. Y.
83 Serodiagnosis of Syphilis. H. S. Bernstein, Boston.

Journal of the Minnesota State Medical Association and the Northwestern Lancet

October 1

84 *An Unworked Field of Preventive Medicine. A. W. Jones, Red Wing.
85 Gall-Bladder Disease. E. S. Muir, Winona.
86 *Open Treatment of Fractures. M. S. Henderson, Rochester.

84. **An Unworked Field of Preventive Medicine.**—Jones discusses the application of preventive medicine to tuberculosis.

86. **Open Treatment of Fractures.**—Henderson has used the metal bone-splint of Lane in 27 cases, and has obtained reports from 6 of them. In only 2 of the cases has it been necessary to remove the splint. Both of these patients were operated on for old compound non-united fracture.

Kansas City Medical Index-Lancet

October

87 Disposal of City Sewage and Refuse. G. Halley, Kansas City, Mo.
88 The Owen Bill and Its Opponents. S. A. Knopf, New York.
89 Atrophy of Disuse. E. H. Skinner, Kansas City, Mo.
90 More Work and Recreation for the Chronic Insane. G. A. Zeller, Peoria, Ill.
91 Medicine and Medical Men in Bible Times. R. N. Wilson, Philadelphia.
92 Procreation Laws. G. H. Bogart, Brookville, Ind.
93 So-Called Reflex Neurotic Symptoms and the Psychic Factor. T. A. Williams, Washington, D. C.

Interstate Medical Journal, St. Louis

October

94 *Treatment of Cancer by Radium. L. Wickham, Paris.
95 Experiences with the Ehrlich-Hata Remedy, "606," in Syphilis. W. Wechselmann, Berlin
96 Pellagra. G. A. Zeller, Peoria, Ill.
97 Duodenal Alimentation. M. Einhorn, New York.
98 Functional Disorders of the Genito-Urinary System. E. O. Smith, Cincinnati.
99 *Auscultation in Diagnosis of Fractured Ribs. S. T. Lipsitz, St. Louis.

94. **Treatment of Cancer.**—Wickham says that if a surgical extirpation cannot be made on account of untoward conditions, radium applied before the operation lessens the destructive process in the parts involved, and renders operable tumors which were not so before. Finally, there are a number of cases of extreme gravity in which surgery cannot intervene, but in which radium, without producing a particularly beneficial result, can at least relieve patients during long and tedious periods of pain (analgesic action of radium) and lessen hemorrhages and secretions. The special organ for radium therapy is the uterus. In fact, in cancer of the uterus, when it is employed before surgical intervention or simply to relieve the patient, radium plays a most useful rôle. The same result obtains in advanced cancer of the breast. Radium therapy must not be regarded as a means destined to cure patients afflicted with serious cancers, but may be employed by itself or in combination with other means to relieve the sick and prolong life during a period long enough to compel the thought that, at least, an apparent cure has been effected. Even when cures are absolute—results which Wickham says he has obtained relatively often—a relapse in the shape of a metastasis may take place.

Of all the malignant tumors, the giant-celled sarcomata are the most favorable to treatment because they are local. Moreover, in these cases the word "cured" is every now and then permissible. On the other hand, the lymphosarcomata, though they rapidly recede under the action of radium, are unfortunately only too often followed by a metastasis. Of all the lobular and tubular forms of epithelioma, those that are found in the mouth are the least tractable to radium.

99. **Fractured Ribs.**—Auscultation, in Lipsitz's opinion, will reveal fracture of a rib quicker than palpation will. He says that the sound obtained over a fractured rib is characteristic, is unlike the sounds of pleural rubs, air crepitation or râles and is therefore pathognomonic. Direct auscultation is not as satisfactory as the indirect method with the aid of the stethoscope. Have the patient inspire as deeply as possible. The sound is usually best elicited at the height of the inspiration or during the beginning of expiration. On listening in this way, it is with rare exception that any fracture of a rib can escape the examiner's notice. In two cases of the series there were multiple fractures. The exact site of each lesion was located without difficulty. In three cases the diagnoses were made by auscultation alone, palpation and manipulation giving negative results. This was explained by the knowledge that the severe pain produced by manipulation lessened the efficiency of this procedure, and that mere palpation was not sufficiently delicate. In all the other cases in which manual methods gave positive results auscultation was correspondingly successful. In a number of cases of suspected fracture not included in the series, careful auscultation was unsuccessful and invariably the results of palpation and manipulation were also negative. Other diagnoses were made. One may listen over almost any part of the affected side and elicit the peculiar hard, grating, breaking sound or the "click" which emanates from the site of the fracture. Once this sound is discovered over any portion of the chest, it can be followed in the direction of its increasing intensity, until, where it is most pronounced, the site of the fracture is located. As a rule, with practice, if more than one fracture is present all the lesions can be found in this way. This sign is so reliable that it is seldom necessary to send a patient away with a doubtful diagnosis.

Medical Herald, St. Joseph, Mo.

October

100 Modern Conception and Treatment of Fractures of the Femur. N. W. Sharpe, St. Louis.
101 Increased Mortality in the United States from Disease of the Kidneys and Circulatory System. W. F. Milroy, Omaha, Neb.
102 The Black Man and the Black Plague. G. H. Bogart, Brookville, Ind.

Bulletin of the Manila Medical Society

August

103 Acute Yellow Atrophy of the Liver. E. R. Stitt, Canacao, P. I.
104 Philippine Contact-Poisonous Plants. C. B. Robinson, Manila.
105 *Foods Available for Infant Feeding in the Philippine Islands. H. D. Kneedler, Manila.

106 Determination of Food Requirements for Infants. H. Aron, Manila.
107 *Supplying Proper Food to the Poorer Classes. F. Calderon, Manila.
108 *The Preservation of Vaccine Virus. E. H. Ruediger, Manila.
109 Malaria in Infants and Children. H. D. Kneedler, Manila.

105. **Foods Available for Infant Feeding.**—In the Philippines physicians are limited in regard to the variety of foods for the artificially raised child. The tinned milks and modified foods for sale on the market are perhaps the safest to use. The only raw milk available in any quantity is goat's milk. Caraboa milk has been used, but, owing to the scarcity of this animal, this source of supply has been cut off. Outside of the Government farm the cow is as yet almost an unknown quantity. Rice is perhaps the most common cereal used. The Igorrotes feed their artificially-raised babies almost entirely on sweet potatoes. Kneedler's experience with goat's milk has been rather satisfactory. One of the important advantages of the goat as a raw milk producer is that it is refractory to tuberculosis. It is not difficult to secure in Manila a fresh healthy animal for from four to ten pesos, which if properly cared for will give enough milk for one baby. This milk is especially recommended for infants because of its similarity in composition to mother's milk. Apart from its medicinal qualities goat's milk is far superior to the dairy milk ordinarily supplied. The taste is not disagreeable nor the odor bad, provided the animal is properly selected and kept. Each milking should be immediately prepared. A baby six months old should be given equal parts of raw milk and rice water with a little sugar added, and the nine months old child may take the milk unmodified.

107. **Food for the Poorer Classes.**—Calderson describes the methods pursued by the "Gota de Leche" (milk stations), an association instituted through the efforts of the late Dr. David Dougherty of Chicago. Its work is practically the same as that of the various milk commissions established in this country.

108. **Preservation of Vaccine Virus.**—During the past year some tests were made in the Bureau of Science comparing the relative value of the dry point; the emulsion in 3 parts of glycerin and 1 part of distilled water; the emulsion in 3 parts of glycerin and 1 of heated horse-serum; lanolinated vaccine and the dry powder. The preparations were kept at room temperature in a dark place, and at intervals of 7 days their efficacy was tested by the vaccination of monkeys. Dry points and dry powder gave good results after 3 weeks; the emulsion in glycerin and water retained its potency for 5 weeks; diluted with glycerin and heated horse-serum, the virus remained active for 8 weeks and the lanolinated vaccine was inactive after 7 weeks.

Illinois Medical Journal, Springfield

October

110 Hereditary Transmission of Syphilis. J. Zeisler, Chicago.
111 *Infections in Specific Urethritis. B. C. Corbus, Chicago.
112 *Wassermann Reaction in Diagnosis and Treatment of Syphilis. W. T. Mefford, Chicago.
113 Wassermann Reaction in Nervous and Cardio-Vascular Diseases. F. G. Harris, Chicago.
114 *Urinary Acidity. H. B. Harrower, Chicago.
115 Physiology of Digestion in Health and Disease. C. H. Lovewell, Chicago.
116 Diffuse Suppurative Peritonitis. O. M. Steffenson, Chicago.
117 Apparatus for Improved Ether Anesthesia. E. Pynchon, Chicago.
118 The Next United States Pharmacopeia. W. A. Puckner, Chicago.
119 Dysmenorrhea. J. E. D. Silcox, Rio.
120 The Compensation Feature of the Employer's Liability Commission. W. A. Allport, Chicago.

111 and 114. Abstracted in THE JOURNAL, June 4, 1910, pp. 1892 and 1893.

112. Abstracted in THE JOURNAL, May 28, 1910, p. 1808.

Texas State Journal of Medicine, Fort Worth

October

121 Necessity for Ophthalmic Organization in Texas. J. H. Burleson, San Antonio.
122 Sterilization of Women Under Certain Conditions. M. Duggan, San Antonio.
123 *Treatment of Floating Kidney. R. R. White, Temple.
124 Proctoclysis as a Means of Combating Acute Infections. J. S. Hixson, San Angelo.
125 *Does Pterygium Cause Astigmatism? G. P. Hall, Houston.
126 Three Cases of *Tænia Nana*. M. A. Wood, Houston

123. **Floating Kidney.**—In White's method the capsule of the kidney is incised longitudinally and to either side in the direction of the kidney pelvis, thus giving four triangular flaps from the fibrous capsule. Through each of the four flaps of the fibrous capsule, forty-day chromic catgut is passed at several points, folding the capsule on itself to give a firm hold for the sutures. The excess of fatty capsule is cut away on either side and from the upper kidney pole, leaving intact that portion of the fatty capsule attached to the lower pole of the kidney. This, with the peritoneum, is used as an anchor from below to hold the kidney up into the fixed position, it having been gathered up and sutured to the lower angle of the muscular wound. The ligatures in the fibrous flap are threaded into a curved needle, and passed high through the muscular structures on each side of the wound. With care the upper ones may be placed above the eleventh rib. The sutures from below are also directed upward, tending at all times to make upward traction on the kidney. The after-treatment of these patients is important. They should be kept in bed for three weeks, and in a dorsal position. White has performed this operation twenty-four times.

125. **Does Pterygium Cause Astigmatism.**—Hall reports one case which he believes demonstrates that a pterygium can and does produce astigmatism.

Mississippi Medical Monthly, Vicksburg

October

127 Diagnosis and Treatment of Puerperal Infection. S. A. Eggleston, Lexington.
128 Early Diagnosis of Tuberculosis. C. L. Simmons, McBride.
129 Surgical Aspect of Fracture of Patella. M. O. Shivers, Greenville.
130 Treatment of Fracture of the Long Bones. W. T. Black, Memphis, Tenn.
131 Pellagra in a Child Two Years and Two Months of Age. R. E. Jones, Crystal Springs.

California State Journal of Medicine, San Francisco

October

132 *Treatment of Chronic Gastric Ulcer. G. E. Ebright, San Francisco.
133 Case of Twitching of the Orbicularis Palpebrarum Successfully Treated with Calcium Chlorid. T. C. Burnett, Berkeley.
134 Indications and Contraindications for the Use of Spinal Anesthesia. A. W. Collins, San Francisco.
135 Necessary Reforms Governing Medical Expert Testimony. T. J. Orbison, Los Angeles.
136 Medical Expert Testimony. A. S. Lobingier, Los Angeles.
137 Bovine Tuberculin in the Treatment of Pulmonary Tuberculosis. W. C. Voorsanger, San Francisco.

132. **Chronic Gastric Ulcer.**—The satisfactory treatment of simple, chronic ulcer of the stomach, according to Ebright, is a diet consisting for a few days entirely of from one to two quarts of milk with, as soon as possible, from two to twelve raw eggs. The patient may be allowed to follow his customary routine of living. Large doses of bismuth are of value in controlling pain. The patient must at all times be on such diet as will improve, first of all his general state of nutrition, in other words forced feeding within the capacity limits of the stomach. Inasmuch as rectal feeding, which has been advised that the stomach may be put at rest, does not cause complete arrest of peristalsis and since it is known retrograde peristalsis may be set up by it, and the food given by rectum actually found in the stomach, and since, at the best, rectal feeding is starvation diet, it would certainly appear that starvation and rectal alimentation are illogical procedures in the treatment of chronic gastric ulcer.

Western Medical Review, Omaha, Neb.

October

138 Hematuria in Surgical Conditions of the Urinary Tract. A. P. Congdon, Omaha.
139 Diagnosis of General Paralysis. T. C. Little, Omaha.
140 Neurasthenia Among Surgical Patients. D. C. Hilton, Lincoln.
141 Diagnosis of Cerebral Tumors. G. A. Young, Omaha.
142 Health: A National Asset. J. H. Mackay, Norfolk.
143 Paroxysmal Tachycardia. R. W. Bliss, Omaha.

American Journal of Orthopedic Surgery, Philadelphia

August

144 *Our Relations with the Community, and Especially with Medical Men. A. Thorndike, Boston.
145 *Orthopedic Treatment of Spinal Paralysis. F. Lange, Munich, Germany.
146 *Operative Treatment of Paralysis of the Shoulder Following Anterior Poliomyelitis. E. H. Bradford, Boston.

147 *The Chemical and Mechanical Stimulation of Bone with Reference to the Epiphyseal and Diaphyseal Lines. R. O. Meisenbach, Buffalo, N. Y.
148 *Muscle Group Isolation and Nerve Anastomosis in the Treatment of the Paralyses of the Extremities. N. Allison and S. I. Schwab, St. Louis.
149 *Coxa Vara. W. Blanchard, Chicago.
150 *Problems in Treatment of Club-Foot. W. G. Stern, Cleveland, Ohio.
151 Operative Treatment of Paralytic Talipes of the Calcaneus Type. R. Whitman, New York.
152 *A Case of Unusual Deformity of the Fingers. D. Cotterill, Edinburgh, Scotland.

144 and 145. Abstracted in THE JOURNAL, June 11, 1910, p. 1995.

146. Abstracted in THE JOURNAL, July 2, 1910, p. 51.

147. **Chemical and Mechanical Stimulation of Bone.**—The object of Meisenbach's work was to study the effects on bone growth by influencing the cellular structures of the epiphyseal cartilage, and to note the effects on ossification. His paper is based on the results of experiments on forty-two rabbits extending over a period of five months. Various substances were injected near the epiphyseal line, and as the animals grew in size the bony changes were noted and studied from a radiographic, anatomic, and microscopic standpoint. Four rabbits were injected with sterile water. They showed no pathologic changes in the injected limb either microscopically or radiographically. Five rabbits received sterile graphite pegs. None of the five rabbits showed any changes radiographically, the epiphyseal line being clear. Three rabbits received the injection of staphylococcus vaccine. Seven rabbits received sterile graphite pegs together with the staphylococcus vaccine. Six showed microscopic change, that is, increased proliferation of the endochondral and perichondral bone in the diaphyseal region. No special changes were noted in the epiphyseal lines. This seems to suggest that a toxin together with mechanical stimulation will produce active formation of the endochondral and perichondral varieties.

Eight rabbits received injection of pure tincture of iodin. None of the surviving rabbits showed any radiographic or microscopic changes in the injected limb. Pure carbolic acid was injected in two rabbits. They showed a slight change radiographically, and microscopically an increased vascularity only. One rabbit received 95 per cent. alcohol and lived eleven days, after which no pathologic condition was noted. Six rabbits received injections of pure formalin. All the rabbits, except one, showed radiographic changes in various degrees, thickening of the cortex, irregular epiphyseal line, exuberant growth of a portion of the diaphysis, and a general widening and thickening of the epiphysis and the diaphysis. All the rabbits showed definite microscopic changes in the injected region except one. In all of the pure formalin specimens the injected tibiæ were enlarged at the diaphysis but somewhat shorter in the total length. The cortex in the region of the diaphysis was materially thickened and the entire diaphysis increased in circumference. The epiphyseal line was irregular and not as pronounced as the cortex. The entire length of the injected tibia was somewhat shorter. The diaphyseal line or the zone of provision calcification was widened in almost every instance, and the zone of calcified matrix increased. In one rabbit, portions of the epiphyseal line were replaced by new bone and ossification hastened. In another, ossification was hastened to such a degree that half of the epiphysis became united with the diaphysis, so that the epiphyseal line was entirely absent.

Six rabbits were injected with 2 per cent. formalin. The radiographic and microscopic changes were similar to those found with the pure formalin but were not so extensive. The radiographic changes were chiefly noted in the thickening of the cortex and the diaphysis with an early ossification. The microscopic changes were an increased amount of endothelial, endochondral, and perichondral bone with a corresponding increased zone of calcified matrix and a swollen and proliferating epiphyseal line, the latter being sometimes replaced by new bone. It is hoped that these experiments will act as a stepping stone to a new method of treatment in many bone cases which have heretofore seemed hopeless as regards helping the patient, such as congenital shortening of the limb, arrest of bone growth following infantile paralysis, tuberculosis of the bone, osteomyelitis, obstinate non-union of fractures, and similar cases.

148, 149 and 150. Abstracted in THE JOURNAL, July 2, 1910, pp. 48, 50 and 51.

152. **Unusual Deformity of the Fingers.**—Four years ago, the patient, a miner, aged 56, met with an accident when a heavy piece of stone fell on the back of the fingers of the left hand. All the fingers were badly bruised, but the middle finger was so badly damaged that it had to be amputated. As soon as the patient began to use his hand again after this injury, he noticed that when he extended the proximal interphalangeal joints of his "ring" and "little" fingers there was a sudden "click," as he expressed it, and this also occurred when the movement of flexion from the fully extended position was begun. The "click" was felt on either side of the palmar surfaces of the proximal interphalangeal joints of the affected fingers. This clicking sensation was always associated with a movement of these joints in some respects similar to that seen in "trigger finger"—that is to say, the last part of the movement of extension and the first part of the movement of flexion took place with a snap or jerk and could not be performed slowly. The condition was considerably more aggravated in the "ring" than in the "little" finger, but in neither case did the joints jerk into apposition of more than normal full extension. This snapping movement, though slightly uncomfortable when it took place, apparently affected the usefulness of the fingers but little.

Cotterill says that so far as one can guess, the sequence of events in the case were as follows: At the original accident the fingers were probably forcibly hyperextended, causing tearing of the palmar portion of the capsular ligament of the proximal interphalangeal joint, while the tendon of the flexor sublimis was split in its long axis into two halves both above and below the point at which the tendon normally divides for the passage through it of the flexor profundus. This having occurred and the vaginal ligaments and tendon sheaths also having been stretched, it would allow of partial lateral displacement of the two portions of the flexor sublimis, giving rise to the condition seen in the little finger. At the operation a year ago on the ring finger, the vaginal ligaments and tendon sheaths were almost certainly divided in their long axis, and the already too mobile tendon slips were then practically unrestrained. This being the case, as the joint was extended the two halves of the tendon slipped gradually outward, finally making the "click" as they jerked from their normal groove to lie on the lateral aspects of the joint. In this position the tendon slips may possibly have come to act as extensors, much in the same way as the lumbrical muscles, but they certainly lost all their power as flexors with the result that the movement of extension, at the proximal interphalangeal joint, was practically unopposed, for the profundus tendon is merely a secondary flexor of this joint. Added to the condition of the tendon slips there must have been some weakness of the palmar part of the capsular ligament of the joint to permit of the amount of hyperextension produced and this was no doubt caused by the initial injury. The flexion of the metacarpophalangeal and distal interphalangeal joints was due, it is thought, to the tension of the flexor profundus over the hyperextended joint. The maneuver described, when the patient wished to flex the affected joint, was obviously performed in order to slacken the displaced tendon slips and to aid their return to the normal position. At the operation the diagnosis was confirmed.

Bulletin of the Medical and Chirurgical Faculty of Maryland

October

153 The General Practitioner—Then and Now. F. B. Smith, Frederick.

St. Paul Medical Journal

October

154 Influence of Mohammedism on Medicine. G. I. Kheiralla, Lake Preston, S. Dak.
155 Influence of Bacterial Invasion. J. T. Christison, St. Paul.
156 Transperitoneal Cystotomy. A. MacLaren and H. P. Ritchie, St. Paul.
157 Tuberculosis County Hospital Laws. C. Easton, St. Paul.
158 Exudative Diathesis in Its Relation to Infants. W. R. Ramsey, St. Paul.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

October 1

1 Ancient Humorism and Modern Humorism. C. Richet.
2 *Absence of the Fallopian Tubes and of Menstruation. W. G. Spencer.
3 The Quickening Spirit. L. Williams.
4 Surgical Treatment of Exophthalmic Goiter. T. Kocher.
5 Colotomy Openings and Permanent Ureteral Fistulæ. C. J. Bond.
6 *Abdomino-Perineal Operation for Rectal Cancer. W. E. Miles.
7 Secondary Suture of the Circumflex Nerve. R. Kennedy.
8 Immediate Results of Surgical Operations. G. W. Crile.
9 Operative Treatment of Chronic Mucous and Ulcerative Colitis. P. L. Mummery.
10 Conditions Liable to be Mistaken for Gastric Cancer. A. Thomson.
11 Conditions Simulating Gastric Cancer. F. D. Bird.
12 Early Diagnosis and Treatment of Gastric Cancer. H. J. Paterson.
13 Gastro-Enterostomy. C. M. Moullin.
14 Excision of Gastric Ulcers. E. Deanesly.
15 Hydatid Disease of the Liver. C. MacLaurin.
16 Rupture of Hepatic Abscesses into the Lungs. J. Cantlie.
17 Sandfly Fever (Phlebotomus Fever or *Pappataciefieber*) in Cairo. L. Phillips.
18 Dysentery. G. H. Fink.
19 Bilharziosis in Egypt. F. C. Madden.
20 Typhoid and Paratyphoid in Egypt. L. Phillips.
21 Human Botryomycosis. R. G. Archibald.
22 Effect of a Mosquito Net on the Air Within It. G. D. Whyte.

2. Absence of Fallopian Tubes.—No case similar to Spencer's is said to be recorded in the literature. A single woman, aged 28, complained of attacks of pain in the right iliac region. She had never menstruated; she had never had a show of any kind. At about the age of 18 she first felt sharp pains in the abdomen around the umbilicus, and such pains have recurred with fair regularity every month, usually lasting three or four days. Gradually the attacks of pain became more severe. They began by a strange feeling in the right iliac region; then, as the pain increased around the umbilicus, she felt faint, trembled, sweated and had nausea. A very severe attack occurred in September, 1908, and another in the following November. Recently the umbilical pain had tended to spread round to the back and downward behind the left hip, the latter pain persisting between the attacks.

She was a well-grown woman with normal breasts, external genitals and hair. There was a well-defined normal hymen. By rectum a normal movable uterus with cervix was felt. To the right side there was felt bimanually an oval swelling in the ileocecal region resting on the psoas muscle. It was thought to be an enlarged appendix adherent to an ovary, separated from the uterus by a normal broad ligament. On the left side there was a smaller swelling, which was taken to be a tender ovary, while the left broad ligament seemed free. No further abnormality was discovered. The uterus was quite normal; in the place of each cornu was a pea-like knob. There was no sign of the main portion of the Fallopian tube on either side, but the round ligament was well-defined, and there was nothing else abnormal about the inner part of the broad ligament. Each ovary was enclosed in a pouch formed by peritoneal adhesions; the opening of the pouch into the general peritoneal cavity was directed backward; the peritoneal surface of the ovaries projected into the interior of the pouches. This surface of the ovary appeared normal, and on pricking one of the follicles fluid spurted out; but Spencer did not observe any sign of a corpus luteum of menstruation, nor any remains of blood clot or pigment whatever. In the wall of the sac where it was continuous with the broad ligament there appeared to be traces of the fimbriæ of the Fallopian tube.

Spencer then went on to search for the Fallopian tubes. A uterine sound was passed quite easily, and to the normal distance. He then laid open the uterine cavity by cutting transversely on the point of the sound, and tried to pass a fine probe outward through the cornua. But the lumen of the uterus did not extend into the pea-like knobs previously noted. On the left side the knob contained a small dermoid cyst enclosing sebaceous material but no hairs. On the right the knob was a mass of fibrous tissue. Spencer next slit outward the upper free edge of the broad ligaments, and split the layers without finding any trace of a Fallopian tube, except what appeared to be the fimbriated extremity fused in the wall of the ovarian pouches. The patient is now in very good health, has had no further attacks nor abdominal disturbance of any kind nor has she had any noticeable vaginal discharge.

6. Rectal Cancer.—Miles has been able to determine that a cancerous growth in the rectum spreads in three directions, and invades the tissues either in the nature of a direct permeation, or as separate metastases; at any rate so far as naked-eye appearances show. The directions of spread, he says, are downward, laterally, and upward, and take place in the zones of tissue traversed by the lymph vessels. The tissues in the zone of downward spread consist of the wall of the bowel below the growth, the external sphincter muscle, the perianal skin, and the fat contained in the ischio-rectal fossa. The zone of lateral spread comprises the levatores ani muscles, the fascia propria of the rectum, the presacral connective tissue, and its contained lymphatic glands. In the male, the capsule of the prostate gland, the vesiculæ seminales, and the base of the bladder; and in the female the posterior wall of the vagina, the cervix uteri, and the base of the broad ligament with Poirer's gland. The zone of upward spread consists of the bowel above the growth, the pelvic peritoneum, the pelvic mesocolon, particularly the border attached to the pelvic parietes with the adjacent peritoneum and the lymph nodes situated at the bifurcation of the left common iliac artery.

Miles has found that:

A growth in the rectum, wherever situated, may lead to recurrence in the tissues comprising the zone of downward spread.

A growth in the rectum, wherever situated, may similarly lead to recurrence in the tissues comprising the zone of lateral spread.

A growth in the terminal portion of the pelvic colon may lead to recurrence in both the zones of downward and lateral spread.

Free extirpation of the tissues comprising the downward and lateral zones of spread generally prevents recurrence in the field of operation.

However free the extirpation of the tissues comprising the downward and lateral zones of spread may have been, recurrence will in all probability take place among the tissues of the zone of the upward spread.

The most extensive and complete perineal operation possible is, with few exceptions, quite inadequate for preventing a recurrence of the disease.

Up to the end of 1906, Miles had performed 59 perineal excisions, with 1 death, results which, from the point of view of mortality were quite satisfactory; but, of the 58 patients who recovered, 54 are known to have suffered from recurrence. Of the remaining 4, 1 died 7 years after the operation from some intercurrent disease and 3 remain well and are free from recurrence. Such an experience as the above decided Miles to abandon perineal methods of excision and to rely solely on an abdomino-perineal procedure. He therefore designed an operation which would enable him to extirpate the whole of the tissues comprising the zone of upward as well as those forming the zones of lateral and downward spread, for in this way only could one hope to check the tendency to recurrence. He has now performed this radical operation 26 times. Ten of the patients died within periods varying from 24 hours to 12 days after the operation, 1 is still in the hospital, 1 left too recently to make any statement about him, 1 died 13 months after operation without sign of recurrence, and 1 has not been since seen. This accounts for 14 out of the 26 patients. The remaining 12 are all still well and show no sign of recurrence after periods varying from a few months to over three and a third years. In 8 cases the period is over 18 months and in 4 is over 3 years.

Lancet, London

October 1

23 *Malignant Disease of the Nasal Passages. W. Stuart-Low.
24 *Essential Cause of Gastric and Duodenal Ulcer. C. M. Moulin.
25 *Physique of the Phthisical. H. deC. Woodcock.
26 *Ruptured Abdominal Hydatid. J. E. Barling and D. A. Welsh.
27 Clinical Surgery in Japan. Y. Takaki.
28 Henoch's Purpura with Intestinal Intussusception. H. B. Robinson.
29 *Relief of Symptoms of Prostatic Obstruction. J. S. Bolton.
30 A Reminder of the Battle of Omdurman. J. B. Christopherson.
31 Etiology and Diagnosis of German Measles (Rubeola). C. Beards and W. L. Goldie.
32 Stovain. G. Thom.
33 Ownership of Medical Preparations. H. W. Gadd.

23. Disease of the Nasal Passages.—Stuart-Low reports seven cases to illustrate the rather frequent occurrence of sarcoma and carcinoma in these localities. He says that pain

is not to be relied on as an indication of malignant disease in the nose. Increasing and persistent stuffiness, especially if unilateral, is an important point as regards diagnosis. Recurring and increasingly severe hemorrhage, especially if unilateral, is always a suspicious symptom. A combination of hemorrhage and increasing stuffiness is often a serious indication of the existence of a new growth. The making of an early diagnosis is of great importance. It is imperative to make a thorough and systematic examination in all obscure cases of nasal disease, and to remove early a piece of any obstruction in the nasal passages for a pathologic report. It is of great importance when there is malignant disease to operate as soon as possible after a diagnosis has been made to secure a successful removal. It is advisable to adopt the canine-fossa route in operating for the extirpation of intranasal tumors. Innocent and malignant polypi are likely to coexist.

24. **Gastric and Duodenal Ulcer.**—Moullin says that acid of much greater strength than is ever secreted by the gastric mucous membrane may be swallowed with impunity and without causing pain, even when an ulcer is present; and while in many cases of ulcer hydrochloric acid appears to be in excess, this is certainly not so in all; there are many instances in which there is a decided deficiency. As a matter of fact, the excess of free hydrochloric acid, the so-called hyperchlorhydria, to which so much importance has been attached, is a secondary consequence of spasmodic contraction of the pylorus, or of hypersecretion of gastric juice, or of both together; and these are the result of the morbid condition of the mucous membrane induced by such causes as chronic septic poisoning or irritation spreading from an ulcer. The excess is due to accumulation in the stomach. There is nothing whatever to show that the strength of hydrochloric acid in gastric juice as secreted is ever raised in any way, though it may be lowered. So long as the epithelial lining of the stomach remains intact and uninjured, hydrochloric acid in any strength that can be secreted has no effect. But if from any cause, whether it is the cause that gave rise to the pylorospasm and hypersecretion or any other, the protecting epithelial layer of the stomach is injured or the deeper tissues exposed, the acid at once comes into play; the injured tissues are injured still further; inflammation sets in; the débris is digested, and an ulcer left. Ulceration does not occur except when hydrochloric acid is present, for digestion does not; but hydrochloric acid, whether it has accumulated so as to be in excess or whether it has not, cannot cause an ulcer unless there is some other agent at work to initiate the lesion. Given this other agent the effect of the acid, as Bolton has shown, is in proportion to its strength.

25. **Physique of the Phthisical.**—Several tables constructed by Woodcock are in part the result of study in morbidity rather than in mortality among phthisical subjects. No notice has been taken in them of the ordinary and universally recognized physical signs of phthisis, but an attempt has been made to call attention to certain other appearances coincident with phthisis, though not generally recognized. First, and most important of all, is the peculiar appearance of the soft palate, which Woodcock begins to look for with certainty in almost all cases of marked phthisis. The phthisical soft palate is of a pearly bluish-white tint, and is covered with a somewhat mucoid moisture. Woodcock places it as a sign of sinister import equal to the rapid phthisical pulse, or the temperature, pulse and respiration reaction to fatigue. The hand ratio is found by comparison of the length of the hand, from the ridge of the ulna in an oblique line to the end of the longest finger, with the breadth across the hand at the knuckles. Hyperextension of the fingers on the metacarpals or of the terminal on the penultimate phalanx is a sign commonly found in the cases of people in advanced or rapidly advancing phthisis. Clubbing as a means of diagnosis has, in his opinion, lost some of its value. Philip's glands, i. e., the enlarged deep glands just above the clavicle—are always found in phthisical children; but their presence does not necessarily indicate phthisis, since they are so frequently encountered in apparently normal children. In the same way, enlargement of the other glands of the neck is so generally found in all classes of patients who consult the doctor for any and every illness that even if one found them in every phthisical patient the diagnostic value would not be great.

With regard to skin conditions of phthisicals, Woodcock recalls only one case of lupus in ten years among the patients under his care at Armley and Gateforth for pulmonary tuberculosis. Tinea versicolor is especially common at Armley Hospital, which harbors advanced cases, and not common at Gateforth, where only early cases are received. Marked acne is not common; indeed, it is hardly ever found among advanced phthisicals. Dilatation of the stomach is of common occurrence among tuberculous patients.

26. **Ruptured Abdominal Hydatid.**—The facts presented by Barling and Welsh have reference to a series of six cases of hydatid disease complicated by rupture or leakage of the cyst into the peritoneal cavity. In five cases the cyst was situated in the liver, in the remaining one in the spleen. The cases all occurred within a period of eighteen months. The symptom-complex to which they draw attention includes (1) eosinophila, (2) peritonitis with effusion, and (3) urticaria.

29. **Relief of Symptoms of Prostatic Obstruction.**—The method of treatment employed by Bolton is to pass an electrode into the rectum and administer high-frequency currents. The electrode is so placed that it lies against the posterior surface of the prostate. The current is taken from the top of the resonator. Bolton's most successful cases have been those in which congestion and irritation rather than size of prostate have been the prominent features. While it is not possible to cure every patient, Bolton says that relief is experienced by such a large proportion as to make the treatment worthy of the trial in all uncomplicated cases. The results of the treatment may be summed up in a few words. Congestion in the blood-vessels and stasis in the tissues are relieved. The nerves are soothed. The intense irritability of the bladder which is such a marked feature of the disease passes away. The tone of the bladder muscles is improved, and as a consequence the size of the stream is increased and also the force of propulsion. The bladder becomes able to empty itself, and the urine returns to normal. The restoration of the confidence of the patient is no small help in lessening the frequency of micturition.

Clinical Journal, London

September 28

34 Acute Bulbar Paralysis. L. G. Guthrie.
35 Innocent Tumors of the Rectum. C. G. Watson.

Bristol Medico-Chirurgical Journal

September

36 Postgraduate Study. J. M. Rattray.
37 *Leukemia Treated by Roentgen Rays. J. M. Clarke.
38 Splenectomy with a Case of Simple Hypertrophy of the Spleen Treated by Operation. J. Swain.
39 Radiographic Estimation of Simple Enlargement. W. Cotton.
40 Anomalous Cutaneous Eruption. W. K. Wills.

37. **Leukemia Treated by the Roentgen Rays.**—Clarke reports four cases which he belives confirm the experience of other observers, that although Roentgen-ray treatment does not result in cure in leukemia, it gives a greater measure of relief in most cases than is derived from any other form of treatment, and prolongs life. If ordinary precautions are taken, and a careful watch kept on the state of the blood as regards the red cells and hemoglobin, and on the condition of the urine throughout the period of treatment, it seems to be devoid of danger. The presence of a slight albuminuria in one case and of marked glycosuria in another seemed to form no contra-indication to Roentgen-ray treatment, as they gave no trouble. The Roentgen rays should be applied over the long bones and vertebræ as well as over the spleen.

Practitioner, London

October

41 Common Ailments. D. Duckworth.
42 Treatment of Gonorrhea in Men. L. Wickham.
43 Non-Specific Sores. C. F. Marshall.
44 Leukorrhea. H. Jellett.
45 *Treatment of Varicose Veins of the Leg. A. E. Barker.
46 Pleurisy. F. deH. Hall.
47 Idem. G. Rankin.
48 Insomnia. D. W. C. Hood.
49 Chronic Hoarseness. H. Tilley.
50 Tonsillitis. C. A. Parker.
51 Asthma. P. W. Williams.

52 Nose Bleeding. E. W. Roughton.
53 Warts and Chilblains. E. G. Little.
54 *Treatment of Ringworm. P. S. Abraham.
55 Stammering and Its Treatment. H. G. Langwill.
56 Treatment of Nevi. J. L. Bunch.
57 Treatment of Certain Sprains. F. Romer.

45. **Varicose Veins of Leg.**—Barker says that many patients with congenital weakness of their vein walls could stave off operation indefinitely if they would or could adopt the proper measures to prevent the engorgement of the veins which leads to the changes described. These consist in active exercise and avoidance of prolonged standing, keeping the bowels open, and cold douching of the legs. Among these, active exercise, which unloads the vessels by the free play of the muscles and increased tone in all the tissues, is the most important. It is to those who, unfortunately, are unable to take active exercise, and who are condemned to stand long and are obliged to neglect their general health, that operation offers relief.

54. **Ringworm.**—For inveterate and extensive cases Abraham recommends the Roentgen rays. Other old as well as recent cases have done well with an ointment of pyrogallic acid, of from 5 to 10 per cent. or a phenol and salicylic acid ointment, of each ʒi. to the ounce; others, again, do well with cupric oleate. A composition that he has used much is:

R	Gm. or c.c.		
Cupri oleati	15		ʒss
Acidi carbolici liq.	4		ʒj
Acidi salicylici	4	or	ʒj
Paraffini mollis	15-30		ʒss-ʒj

For very small patches he uses biniodid and other mercurial ointments. The alkaline and alkaline earthy sulphids, which have a depilatory effect, are also useful either in ointments or strong solutions, and Abraham believes that the solution of ammonium sulphid would be used far more frequently than it is to produce a temporary alopecia were it not for its evil odor. Abraham recommends that in addition to keeping the whole head shaved, or with the hair cut very close and, so far as possible, always covered with some germicide ointment, that the cheapest caps and hats be procured and burnt after a comparatively short use. In his opinion, a thorough washing with an antiseptic soap once a week, while under treatment with ointments, is quite enough—the ointment to be rubbed in all over directly the scalp is dry. Cataphoresis and the use of formalin he found too painful to the patient and even harmful, hence he has discarded these methods of treatment.

Presse Médicale, Paris

September 17, XVIII, No. 75, pp. 697-704

58 The Argyll-Robertson Sign Cannot Be the Result of Basal Meningitis. C. Lafon.
59 End-Results of Gastro-Enterostomy. (Valeur de la gastro-entérostomie.) P. Desfosses.

September 21, No. 76, pp. 697-712

60 Tuberculin in Treatment of Tuberculosis of Urinary Apparatus. C. Mantoux.
61 Climate and Meteorology from Standpoint of Pathology. (Ambiance cosmique et milieu organique.) A. Martinet.
62 Systematic Training in Proper Breathing. (Méthode de rééducation respiratoire.) A. Thooris.

September 24, No. 77, pp. 713-720

63 Mydriatic Action of Organ Extracts and Fluids. E. Catapano.

Revue de Chirurgie, Paris

September, XXX, No. 9, pp. 465-728

64 *Laceration of Mesentery with Strangulated Hernia. M. Guibé.
65 *Fracture of Scaphoid Bone of the Foot. J. Abadie and Raugé.
66 *Tendency to Dislocation of the Hip-Joint in New-Born Infants. (Hanches subluxables et hanches luxées chez les nouveaunés.) P. De Damany and J. Saiget.
67 *Postoperative Parathyreopriva Tetany. X. Delore and H. Alamartine.
68 *Technic for Posterior Subcapsular Tyroidectomy. X. Delore and H. Alamartine.
69 *Subphrenic Abscesses. R. Picqué. Commenced in No. 5.

64. **Laceration of the Mesentery with Strangulated Hernia.**—Guibé had his attention called to this subject by a case in his own experience but he was unable to find in the literature more than seven similar cases and these were all reported by French writers. Vigorous taxis had been applied in four cases and moderate taxis in two others; in the seventh case taxis had been applied by the patient and two physicians in turn. The outcome of the case depends on the extent of the tear; resection of the loop involved is necessary to prevent gangrene if its circulation is much impaired. Two of the patients died in the five cases in which the bowel was resected; another patient recovered after mere suture of the tear as it was comparatively insignificant. Laceration of the mesentery, Guibé remarks, is another evil to be charged to the account of taxis.

65. **Fracture of the Scaphoid Bone of the Foot.**—Besides a personal case reported the details of twenty-eight others from the literature are summarized and the point emphasized that none of the signs permits exact differentiation; this is possible only with the Roentgen-ray examination. If reduction under an anesthetic proves impossible, the region should be exposed and fragments removed and ligaments preventing coaptation pushed out of the way. It seems necessary to wear a plaster cast for a time even after simple reduction, although the cast need not extend more than even half way to the knee. Massage should be done systematically. A flat-floot insole is useful after removal of the cast; with old cases the measures should be those for inveterate flat-foot from the first, with wedge resections striving to restore the normal arch of the foot.

66. **Tendency to Dislocation of the Hip Joint in New-Born Infants.**—The clinical data and theoretical conclusions related compel the conclusion that congenital anthropologic—that is, not teratologic—dislocation of the hip joint never occurs in the uterus but develops after birth. But any malformation in the muscles, the nerve centers presiding over them or malformation of the pelvis is liable to induce congenital luxation. It frequently happens that new-born infants display a tendency to dislocation of the hip joint, "subluxable hip joints," as the authors call them, but this tendency subsides spontaneously in time in almost every case. Girls are more liable to have it than boys. Among the twenty-five illustrations are some showing four cases in which the congenital dislocation was due to dystrophy of the hip muscles. These muscular lesions should be suspected in every case of congenital dislocation of the hip joint in a fetus near term; and other malformations often accompany it. In his four cases there was spina bifida in three and multiple malformations in the other.

67 and 68. **Tetany and Thyroidectomy.**—In these articles Delore and Alamartine describe the best technic for operations on the thyroid in exophthalmic goiter and other conditions to prevent postoperative parathyreopriva tetany. The preferred method is by posterior subcapsular hemithyroidectomy. The details of thirty-two cases of postoperative tetany on record are tabulated, showing the interval after the operation before the tetany developed and the special technics which seem to be more liable to this complication.

69. **Subphrenic Abscesses.**—Picqué reports a number of unpublished cases and discusses those on record, emphasizing the necessity for differentiating the indications for the various types, localization and sources of origin, whether in the stomach, biliary apparatus, appendix, spleen or pancreas, and the pulmonary complications. The prognosis of the abscess left to itself is almost inevitably fatal. He distinguishes between the subphrenic pyopneumothorax and the pyothorax, and insists that the true subphrenic spaces are only those between the diaphragm and liver, between the diaphragm, liver and stomach, and, on the left, around the spleen. As these spaces are bounded by the diaphragm, abscesses in them simulate a thoracic lesion and are particularly liable to spread to the pleura and lung.

Semaine Médicale, Paris

September 28, XXX, No. 39, pp. 457-468

70 *Indications for Operative Treatment in Gastric Pathology and Pseudoneuroses. H. Vulliet.

70. **Indications for Operative Treatment with Gastric Symptoms.**—Vulliet describes a few cases to emphasize that besides stenosis there are other mechanical causes of defective functioning on the part of the stomach. If they are not recognized and the patients are treated as for stenosis, not much harm is done, but if the trouble is classed as a neurosis the disturbance persists indefinitely. He protests against gastro-enterostomy as a routine measure; the surgeon and internist should study

the case together. The surgeon should be enough of a diagnostician to know what belongs to the internist and what to the surgeon. Among the typical cases he cites from his experience were some in which the pylorus and upper part of the duodenum were bound down by adhesions, the sole relic of some long-healed inflammatory process. The disturbances suggested a merely nervous trouble, but no treatment gave effectual relief until the adhesions were broken up. One patient had been treated for this gastric discomfort for years on the assumption of a neurosis but liberation of the perigastritic adhesions relieved all the disturbance. Her little son, 10 years old, already presents gastric discomfort. Another patient had had gastric symptoms for thirty years and had taken all kinds of treatment without avail. There seemed to be nothing abnormal in the motor or secretory functioning of the stomach, but operation revealed an adhesion between the gall-bladder and the intestine; a small cicatrix was found on the liver. Breaking up the adhesions relieved the patient of all the disturbances and she soon increased nearly forty-four pounds in weight. This woman's son, 23 years old, had a callous ulcer of the stomach and required gastro-enterostomy; extensive adhesions were found throughout the region. In another case a woman of 45 had long suffered from the stomach but without distinct signs of an ulcer and the diagnosis of a neurosis had been considered established. The stomach was rather large and exploratory laparotomy revealed the gall-bladder and liver bound down with adhesions, fastening them to the duodenum. Release of the adhesions did not seem to benefit at first but now, two years later, the woman is in perfect health. In another case a year passed after the release of adhesions before the gastric discomfort was entirely banished. The symptoms in this case had suggested cancer but the stomach findings were negative, except for the pains, vomiting of bile and regurgitation, constipation and emaciation. In one case the adhesions formed again after nine months' freedom from symptoms. In two other cases the direct benefit from the operation was slight, but the patients declare that the operation relieved their minds as excluding gross disease.

Berliner klinische Wochenschrift

September 19, XLVII, No. 38, pp. 1733-1772

71 Measurement of the Blood Pressure. (Zur Methodik der Blutdruckmessung am Menschen.) J. R. Ewald.
72 *Ehrlich's "606" in Syphilis. W. Gennerich.
73 *The Wassermann Reaction in Milk. (Bedeutung der positiven Wassermann'schen Reaktion mit Frauenmilch für die Wahl einer Amme.) O. Thomsen.
74 *The Urine Findings in Diagnosis of Carcinoma. (Verwertung des Harnbefundes zur Carcinomdiagnose. II.) E. Salkowski.
75 *Intratracheal Insufflation for General Anesthesia. E. Unger.
76 *Congenital Coxa Vara. G. Drehmann.
77 Subcutaneous Laceration of the Tendon of the Terminal Phalanx. K. Hirsch.
78 Intratracheal Insufflation and Peroral Intubation. F. Kuhn. S. J. Meltzer.

72. **Ehrlich's "606" in Syphilis.**—Gennerich gives the details of thirty cases of syphilis in which "606" was applied, he says, with surprisingly good results. Signs of general disturbance were observed in only one case, although moderate acceleration of the pulse was regularly noted. In one case of complete paresis the patient could stand up and hold out his hand, the day after the injection, and the mind was clear for the first time in two months. In a case of total hemiplegia the arm could be bent to a right angle the next day and the improvement progressed afterward. A similar syphilitic hemiplegia in another case had proved refractory to a long and intensive course of mercurial treatment, while in another case of total paresis, three months of mercury were required to produce the improvement realized in twenty-four hours after the injection of "606."

73. **The Wassermann Reaction in Human Milk.**—Thomsen has found that the Wassermann test applied to the milk usefully supplements the serum test. There was always a positive reaction with the milk when the serum reacted positively; in fifty cases the reaction was more pronounced in the milk than in the serum. The milk of 200 non-syphilitic women gave the reaction in ninety-six cases, no reaction in ninety-eight and a positive reaction with a very small amount in six cases. The test is therefore quantitatively specific when applied within the first two days after the child has begun to nurse. The absence of the reaction is important evidence against the assumption of syphilis as the reaction in the milk does not seem to be influenced by preceding mercurial treatment which may abolish the reaction with the serum.

74. **The Urine Findings in Diagnosis of Carcinoma.**—Salkowski reports further research on the collodial substances in the urine which seem to be materially increased in case of cancer. He describes his simplified technic. The findings in the cases tabulated show that the collodial nitrogen averages 3.5 per cent. of the total nitrogen in normal urine and 7.75 per cent. with cancer.

75. **Intratracheal Insufflation for General Anesthesia.**—Unger reports two cases in which he applied Meltzer's technic. In the first case all went smoothly, but in the second case, two minutes after removal of the tube the young man seemed to be suffocating, with cyanosis; the respiration was purely abdominal and labored and an extensive cutaneous emphysema developed though the pulse remained strong and regular; the pupils were contracted. This condition lasted for half an hour but then gradually subsided although the emphysema persisted for three days. The introduction of the tube had been difficult in this case on account of chronic laryngitis.

76. **Congenital Coxa Vara.**—Drehmann explains this condition as the first degree of a congenital defect in the femur, and discusses the treatment.

Deutsche medizinische Wochenschrift, Berlin

September 22, XXXVI, No. 38, pp. 1737-1784

79 Renal Dropsy. (Nierenwassersucht.) P. F. Richter.
80 Peritonitis from Perforation of Typhoid Ulcers. O. Hermes.
81 Isolation of Specific Substance of Koch's Old Tuberculin. (Endotin, die isolierte spezifische Substanz des AT.) Gordon.
82 Ehrlich's "606" in Syphilis. M. Gourwitsch and S. Bormann.
83 Intoxication from Industrial Inhalation of Nitric Acid. (Nitrosen-Vergiftung durch Inhalation von salpetriger Säure.) A. Savels.
84 Roentgen-Ray Diagnosis of Ethmoidal and Sphenoidal Sinusitis. (Diagnostik der Erkrankungen des Siebbeinlabyrinths und der Keilbeinhöhle durch das Röntgenverfahren.) H. M. Rhese.
85 Vaginal Cesarean Section in the Home. (Zum vaginalen Kaiserschnitt.) H. Töpfer.
86 Durable Specimens of Urine Sediments. A. Skutetzky.

Medizinische Klinink, Berlin

September 25, VI, No. 39, pp. 1519-1558 and Supplement

87 *Gastric Hyperacidity. (Die hyperaziden Zustände.) A. Pick.
88 *The Spirometer in Diagnosis of Emphysema and Heart Disease. O. Bruns.
89 *A Vegetarian Diet in Psoriasis. B. Bloch.
90 Tuberculous Glandular Disease Developing in Two Syphilities. (Zur Symbiose der Syphilis und Tuberkulose.) F. Bering.
91 Ehrlich's "606" in Syphilis. (Herstellung gebrauchsfertiger Lösungen von Dioxydiamidoarsenobenzol.) H. Citron and P. Mulzer.
92 Attack of Gout in the Head of Sternocleidomastoid Muscle. (Zur Lokalisation der Gichtanfälle.) F. J. Flemming.
93 Attack of Gout Simulating Acute Follicular Strumitis. F. J. Flemming.
94 Perforated Tube for Rectal Drainage. (Darmgaseableiter.) N. A. Ssaweljew.
95 *Clinical Diagnosis of Typhoid and Paratyphoid. J. Meinertz.

87. **Gastric Hyperacidity.**—Pick summarizes the present status of knowledge in regard to hyperacid conditions in the stomach. He has encountered a number of cases in which persons whose occupation is particularly wearing on the nervous system, with much worry, experienced a sudden burning pain in the stomach region at certain regular times in the day. Examination revealed that it was due to copious secretion of a very acid gastric juice. In some cases the pain occurred an hour or so after dinner, in others before dinner or after breakfast; and the pain was relieved by taking a little food or alkali. The characteristic feature common to these cases is the fact that the attacks occur only when the patients are attending to business; this is most evident by the absence of the pain on Sundays and holidays. There is generally a tendency to nervousness and hypochondria, and the patients grow weak usually from unwise abstention from food. In certain other cases, the hyperacid attack comes on when the meal is not taken at the accustomed hour; if the meal is on time there is no disturbance. In treatment of all hyperacid conditions and hypersecretion the diet should be such as to stimulate the gastric secretory glands as little as possible. Pick aims to regulate the diet according to the patient's

customs and what he knows he can bear, never forgetting that the causes of hyperacid conditions are liable to be manifold and that there may be disturbances in the sensory and motor functioning as well as in secretion. It is evident from his compilation the authors vary just as widely in their treatment as in their conception of the nature and development of hyperacid conditions. The hyperacidity is merely a symptom, a functional disturbance, the cause for which may differ in every case.

88. **The Spirometer in Emphysema and Heart Disease.**—Bruns comments on the close connection between the vital capacity and the functional capacity of the lungs. Treatment of emphysema should aim to increase the vital capacity, and he has found the spirometer a valuable aid in diagnosis and in estimating the effect of treatment.

89. **Dieting in Treatment of Psoriasis.**—Bloch reports a case in which a man of 40 had had for seven years typical psoriasis of the nails, hands, scrotum and parts of the body. The psoriasis had resisted all kinds of local treatment and arsenic. Bloch ordered him to drop meat from his diet and the result was surprising even in two weeks, and not a trace of the psoriasis was left by the end of three months. It was interesting to see the normal nail growth pushing off the abnormal parts of the nails. The dieting in such cases avoids the substances in the food which had previously modified the soil, permitting the unknown agent of psoriasis to get in its work. Dropping the meat from the diet seemed to put an end to this sensitization.

95. **Diagnosis of Typhoid and Paratyphoid.**—Minertz found that typhoid bacilli could be found in the blood early in the disease but less frequently thereafter, contrary to the experiences with the agglutination reaction which increases as the disease progresses. In the 167 cases which he reviews, the diazo reaction was positive in 65.2 per cent.; in 113 cases the leukocytes numbered less than 6,000 in 63.6 per cent., up to 10,000 in 32 per cent. and over 10,000 in only 4.4 per cent., including 2 convalescents and an infant. His experience, he says, thus emphasizes the diagnostic importance of the diazo reaction and of hypoleukocytosis. Bacteriologic examination of the blood with Kayser's bile tubes permitted an early diagnosis in 100 per cent. of the 16 cases examined during the first week. He regards paratyphoid as an entirely different disease from typhoid, his experience confirming the fact that infection is derived from meat, especially pork, or external contamination of foodstuffs, while typhoid is derived from human sources. The prevalence of paratyphoid bacteria everywhere, their saprophytic existence in man and animals, and other features resemble in many respects the behavior of streptococci.

Münchener medizinische Wochenschrift

September 20, LVII, No. 38, pp. 1977-2024

96 *Oleic Acid as Sign of Gastric Cancer. (Bedeutung der Oelsäure für die Diagnose des Magenkarzinoms.) E. Grafe.
97 Ehrlich's "606" in Syphilis. H. Anscherlik.
98 *Importance of Changes in Drop-Forming Properties of Body Fluids. (Weichardtsche Epiphaninreaktion.) F. Schroen.
99 Drug Eruptions and Hypersusceptibility. (Arzneiexantheme und Ueberempfindlichkeit.) E. Klausner.
100 Acute Septic Meningitis. H. Schottmüller.
101 *Twenty Years of Gall-Stone Operations. (Rückblick auf 1,600 Operationen.) H. Kehr.
102 *Evils of Forcible Dilatation of Anus. (Gefahren der forcierten Dehnung des Sphincter ani.) E. Melchior.
103 *Ascaris Intoxication. (Askarisvergiftung.) R. Goldschmidt.
104 *Cog-Wheel Respiration. (Sakkadiertes Atmen.) Schaefer.
105 *Callous Gastric Ulcers. (Kallöse Magengeschwüre.) G. Kelling.
106 *Myoma and Glycosuria. A. Calmann.
107 The *Spirochaeta Pallida* in the Vaccination Pustule with Inherited Syphilis. J. Langer.

96. **Diagnosis of Gastric Cancer from Hemolysis by Stomach Content.**—Grafe says that further research is confirming the importance of the hemolytic test as revealing gastric carcinoma; the findings of the test were constantly negative in 32 healthy persons and 111 patients with various affections but none involving the stomach, while the hemolysis was pronounced in 100 patients with suspected gastric cancer and in 56 an operation or necropsy confirmed the diagnosis. He has found that the presence of minute amounts of oleic acid in the stomach content in the cases of cancer is apparently responsible for the hemolysis. This discovery, he thinks, much simplifies the test as the ordinary tests for oils can be applied. The patient takes as little fat as possible the evening before the test; the next morning the stomach is rinsed, with care not to aspirate bile into the stomach. Then the Ewald test breakfast is taken and 45 minutes afterward the stomach content is withdrawn and filtered. From 20 to 40 c.c. of the filtrate or even less are then treated by the Hübl iodin-absorption technic and the findings computed for 100, 200 or 300 c.c. of filtrate. The upper limit of normal iodin-absorption value is 9.5 c.c., while with carcinoma the value is from 11 to 20. As extensive ulceration in the stomach gives findings at times approximating those with cancer, the test is most useful for differentiation of cancer from achylia, gastritis, nervous dyspepsia and pernicious anemia. The findings were constantly negative in 9 healthy persons to whom the Hübl technic was applied and in 33 with a stomach affection that had nothing in common with cancer or ulcer and in 33 of 35 patients with gastric ulcer. On the other hand, the findings were positive in 19 out of 20 patients with unmistakable cancer, in 2 with presumptive cancer and in 3 out of 13 suspects. In 3 other cases the clinical data did not harmonize with the positive findings of the hemolytic test but time soon revealed the correctness of the latter, the clinical course soon falling into line. In a man of 40 the iodin absorption value of 11.4 per 100 c.c. of stomach content confirmed the suspicion aroused by discovery of blood in stomach content and stool although there was nothing otherwise to suggest cancer, and a movable tumor was found in the stomach, the microscope showing malignant elements in an old ulcer scar. This is one of the earliest diagnosed cancers on record. In two other cases the positive assumption of cancer was disproved by the negative findings with the test and necropsy later, showing encroachment into the stomach of an aneurysm in the aorta in one case and a callous gastric ulcer in the other. If intestinal juice or bile gets into the stomach the test is not reliable, but blood does not affect it. The hemolytic reaction, he reiterates, is not specific for cancer, but merely indicates the presence in the stomach content of oleic acid which normally is not found there.

98. **Changes in Drop-Forming Properties of Body Fluids.**—Schroen says that Ascoli's meiostagmin reaction is practically the same as Weichardt's epiphanin reaction with a little different technic—both indicate the presence of specific substances under certain conditions modifying the drop-forming properties of the organic fluids. The modifications observed have differential value in certain conditions; for instance, the curve with typhoid and colon bacilli infections is quite different. The biochemical reaction involved is extremely delicate, sensitive and constant with a large number of substances and body fluids.

101. **Gall-Stone Operations.**—Kerr remarks that since he has given up general surgery his results have been growing constantly better in his special field of gall-stone operations as there is no longer any chance of accidental infection from phlegmons, etc., on other patients. He has banished postoperative pneumonia entirely from his service, possibly by his insistence on having the teeth put in good order before he operates, and by the systematic breathing exercises enforced afterward. It is impossible, he declares, to determine by a single examination whether an operation is necessary, except in cases with vital indications. The patients have to be examined several times and kept under observation in the clinic for a few days. His mortality has not been over 1.4 per cent. in his series of 1,600 cases, restricted almost exclusively to patients with cancer or septic cholangitis.

102. **Evils of Forcible Dilatation of the Anal Sphincter.**—Melchior states that re-examination of a number of patients operated on years ago has revealed incontinence in some of the cases in which the sphincter fibers were cut or forcibly stretched. His operations were in eight cases for fissure of the anus, and in twenty-five the anus was stretched during an operation for hemorrhoids. In three of the cases the incontinence is far more disagreeable than the condition for which the operation was done. As the stretching of the sphincter causes no disturbances in the majority of cases,

he is inclined to explain the trouble in these cases as the result of stretching the anus before it was entirely relaxed under the influence of the anesthetic. In one instance the anus was stretched under primary ether anesthesia, which probably is not deep enough for these cases. The trouble is possibly the result of laceration of some of the sphincter fibers with secondary atrophy, although it is possible that the mere stretching alone might injure the fibers enough to lead to consecutive atrophy.

103. **Ascaris Poisoning.**—Goldschmidt relates that he and some of his assistants have attacks resembling hay fever and asthma when they are dissecting and working on ascarides. The peculiar pungent odor of the worms seems to irritate the mucous membrane, even without direct contact with the tissues. The ascaris found in the horse is much more toxic in this respect than the ascaris of man and pigs.

104. **Jerking Inspiration.**—Schaefer denies any pathologic significance to a staccato respiration, believing that it is merely the result of the propagation to the lung tissue of the concussion of the heart beat. It is similar to the vibration of the voice induced by tapping on the larynx during singing and whistling.

105. **Callous Gastric Ulcer.**—Kelling has operated in 51 cases of callous gastric ulcer with an interval since of over three years, and he discusses the diagnosis and treatment. The disturbances are inclined to be chronic, without the remissions observed with simple ulcer, and they continue without much change through months and years. About a third of the ulcers were palpable. The long duration of the lesion is the principal argument against cancer; a hemorrhagic tendency was evident in the majority of the cases, and an open ulcer was suggested by the intense pains especially during digestion. These callous ulcers do not heal under internal measures like simple ulcers, but, excluding the malignant cases, nine-tenths of the patients were cured of all disturbances by a gastro-enterostomy. In about one-third of his cases there was a malignant tendency and others have found it in up to 40 and even 50 per cent. Dietetic after-treatment is necessary when gastro-enterostomy has been done, and during the summer special care should be taken to avoid gastro-intestinal fermentations and to ward off intestinal catarrh. The danger of cancer with callous ulcer is over twice as great as with ordinary ulcer, but the ultimate outcome after removal seems to be more favorable with cancer developing in a callous ulcer than under other conditions. He has examined over 1,300 patients with various diseases to determine the frequency of a hemolytic reaction in the blood, and has found this reaction a useful guide as to the presence of malignant disease.

106. **Myoma and Glycosuria.**—Calmann reports two cases in which uterine myomas were accompanied by slight glycosuria without any other signs of diabetes. In the first patient the glycosuria disappeared entirely after removal of the myomatous uterus, but the glycosuria was not affected by the hysterectomy in the other case. He urges study of the connection between myoma and glycosuria, insisting that the urine should be examined again and again for two years at least after hysterectomy to learn the conditions in respect to elimination of sugar, and whether actual diabetes is influenced by the operation.

Virchows Archiv, Berlin

September, CCI, No. 3, pp. 321-476

108 Peculiar Cancroid of the Kidney. (Eigenartiges Kankroid der Niere.) F. P. Scheel.
109 Mixed Tumors of the Liver. (Zur Kenntnis der Mischgeschwülste der Leber.) B. Hippel.
110 Solitary Liver Cysts. (Zur Kenntnis der solitären Leberzysten.) L. Plenk.
111 Dysplasia of the Liver or Juvenile Cirrhosis? O. Meyer.
112 Changes in the Liver in Eclampsia. (Eklamptische Leberveränderungen.) W. Ceelen.
113 Behavior of Elastic Tissue with Aneurysm of the Aorta. (Verhalten des elastischen Gewebes bei Aneurysmen der Aorta.) R. Amenomiya.
114 Action on the Endocardium of Extracts of Cancers. (Wirkung von Extrakten bösartiger Geschwülste auf das Endokard.) L. Panichi and R. Varni.
115 Influence of Bacterial Toxins on Animal Tissue. (Einfluss von Bakterientoxinen auf das tierische Gewebe.) W. Vierhuff.
116 Volvulus of the Entire Small and Part of Large Intestine After Removal of Mesenteric Cyst. H. Hübner.
117 Hyperplasia of the Sheaths of the Nerves of Domestic Animals. (Ueber Hyperplasie der Hüllen an den Nerven der Haustiere.) O. Bossert.
118 Fibrous Atrophy of the Bones. (Die fibröse Atrophie der Knochen.) W. Saurborn.
119 Eighth Case on Record of Hernia of the Lesser Sac of the Peritoneum Through a Hole in the Mesocolon. (Hernia bursea omentalis mesocolica.) F. Stoltzenzerg.

Wiener klinische Wochenschrift, Vienna

September 22, XXIII, No. 38, pp. 1335-1366

120 Teaching of Physiology in Vienna. S. Exner.
121 •The Continuous Functioning of the Mammary Glands. (Die Kontinuität der Funktion der Milchdrüsen.) M. Schein.
122 •Low Blood-Pressure from Various Causes. (Vaskuläre Hypotonien.) E. Münzer.
123 Coagulation Time of the Blood Not Altered in Eclampsia. (Gerinnung und gerinnungserregende Substanzen bei der Eklampsie.) G. M. Cristea and B. Bienenfeld.
124 Operations on the Esophagus. (Verletzungen und Krankheiten der Speiseröhre.) K. Ewald. Commenced in No. 37.

121. **Continuity of the Functioning of the Mammary Gland.**—Schein thinks that he has demonstrated that the mammary gland has an insensible internal secretion and that there is a continuous functioning of the gland not restricted to the production of a visible secretion.

122. **Pathologic Low Blood-Pressure.**—Münzer reviews the various groups of conditions accompanied by low blood-pressure aside from the acute or chronic infectious conditions. He gives a number of examples of low blood-pressure as the result of arteriosclerosis restricted to the large vessels. The maximal blood-pressure is low while the propelling force of the pulse wave is high—typical signs of changes in the large vessels. When the propelling force declines, this is a bad omen and should attract attention. In one of his cases this sign closely preceded sudden death and in two others it preceded severe cerebral hemorrhage. In another patient this sign was observed during a postinfectious cardiovascular disturbance and subsided under appropriate measures. In another group the low blood-pressure was due to status lymphaticus, and Münzer has found unusually low blood-pressure in his patients with exophthalmic goiter—contrary to statements in the text-books. His third group of cases includes patients with orthostatic albuminuria; in one case the low blood-pressure and low pulse force were observed with severe nephritic albuminuria which assumed the orthostatic form. In a case reported with the detailed findings the tendency to fatigue and apathy, the gastro-intestinal symptoms and the extremely low blood pressure suggested Addison's disease or severe functional disturbance in the chromaffine system. Herz has lately reported some cases of similar hypnotic bradycardia; it is possible that the assumption of defective functioning of the chromaffine system may explain orthostatic albuminuria. Münzer states further that vascular hypertonicity is the rule with nephritis; not until the vessels are injured by the effects of nephritis does the blood-pressure rise. Until the vessels are thus injured, the blood-pressure is normal or below. A case of paroxysmal tachycardia which he reports in detail shows that the pulse rate and blood-pressure are independent of each other. In conclusion he refers to the low blood-pressure in cachectic conditions.

Zentralblatt für Chirurgie, Leipsic

September 24, XXXVII, No. 39, pp. 1281-1304

125 Operative Mobilization of the Thorax. R. Klapp and F. W. von Goeldel.
126 Circular and Lateral Suture of Veins. (Venennaht.) J. H. Zaaijer.

Zentralblatt für Gynäkologie, Leipsic

September 24, XXXIV, No. 39, pp. 1257-1280

127 Management of Sacro-Occipital Cephalic Presentation. (Positio occipitalis sacralis.) G. Trapl.
128 Incarceration of the Intestine After Ventrofixation of the Uterus. (Darmeinklemmung nach Ventrofixation.) Guggisberg.

Gazzetta degli Ospedali e delle Cliniche

September 18, XXXI, No. 112, pp. 1177-1192

129 Favorable Experiences with Electrotherapy in Chorea. G. Viana.

September 20, No. 113, pp. 1193-1200

130 Organotherapy in Sexual Neurasthenia. C. Ottone.

September 22, No. 11¼, pp. 1201-1208

131 The Eosinophils in the Blood and Sputum of Tuberculous Patients. B. Nicola.

Policlinco, Rome

September 18, XVII, No. 38, pp. 1187-1218

132 Suppuration After Injections of Quinin. R. Sabelli.

September 25, No. 39, pp. 1219-1250

133 Ehrlich's "606" in Syphilis. U. Mantegazza.
134 Spinal Anesthesia in the Hospitals of Rome. (La rachianestesia nella regia Clinica chirurgica e negli ospedali di Roma.) F. Caccia and A. Pennisi. Commenced in No. 38.

Medical Section, September, No. 9, pp. 381-428

135 Research on Heart Functioning. (Studi critici e sperimentali intorno ad alcune questioni controverse di fisiologia.) B. Bocci.

Surgical Section, September, No. 9, pp. 381-428

136 *Bilateral Sarcoma of the Testicles. P. Sabella.

136. **Sarcoma of the Testicles.**—Sabella's patient was a young man of 23 with a tumor in the left testicle which on removal proved to be a sarcoma. Four months later he returned with an abdominal tumor which proved to be the undescended testicle, and this, likewise, was the seat of a sarcoma. The patient has been in good health during the eight months since. None of the glands seems to be affected. Sabella discusses the peculiar abdominal-lumbar location of the undescended testicle in this case and the occurrence of the sarcoma in both testicles with no apparent communication between them. He also reviews the literature on a constitutional tendency to neoplasms and the predisposition afforded by the undescended testicle.

Riforma Medica, Naples

September 19, XXV, No. 38, pp. 1037-1064

137 Histologic Study of Cystic Degeneration of the Kidney. R. Secchi and G. Mareschi.
138 Ehrlich's "606" in Syphilis. R. Campana.
139 Gastric Disease. Historical Review. (Gastropatie dinamiche ed organiche. III.) G. Rummo.

Hospitalstidende, Copenhagen

August 31, LIII, No. 35, pp. 1009-1032

140 Treatment of Threatening Gastric Hemorrhage. (Behandling af de livsfarlige Mavebløddninger.) L. Kraft. Commenced in No. 34.

September 3, No. 36, pp. 1033-1056

141 The New Public Hospital in Copenhagen. (Rigshospitalet.)

Ugeskrift for Læger, Copenhagen

September 1, LXXII, No. 35, pp. 1035-1068

142 The New Public Hospital in Copenhagen. (Rigshospitalet).
143 Treatment of Appendicitis. (Om principmaessig tidlig Operation ved akut Appendicitis.) A. Pers.

September 15, No. 37, pp. 1099-1124

144 Treatment of Subperiosteal Abscess in the Mastoid Region. H. Mygind.

September 22, No. 38, pp. 1125-1160

145 Ehrlich's "606" in Syphilis. (De første Dioxydiamidoarsenobenzol-Injektioner paa Rudolph Berghs Hospital.) E. Pontoppidan.
146 Experimental Study of Gastric Ulcer. F. Rosenbach.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

COMPTE RENDU DES TRAVAUX DU DEUXIÈME CONGRÈS INTERNATIONAL POUR LA RÉPRESSION DES FRAUDES CONCERNANT LES DENRÉES ALIMENTAIRES. Les Matières Premières de la Droguerie; les Huiles Essentielles et Matières Aromatiques; les Produits Chimiques; les Eaux Minérales. Octobre 17-24, 1909. Paper. Price, 12 francs. Pp. 1496. Paris: Société Universell de la Croix-Blanche de Genève, Secrètariat Général, 11, Rue d'Athènes, 1910.

SECOND ANNUAL REPORT OF THE MICHIGAN ASSOCIATION FOR THE PREVENTION AND RELIEF OF TUBERCULOSIS FOR 1909-1910. Containing Statement of Work Accomplished—Report of Convention at Ann Arbor—Report of Local Associations—State Needs—Report of Secretary and Treasurer. A Brief of the Year's Work. Submitted by the Secretary, Aldred Scott Warthin, M.D., Ann Arbor, Mich., Feb. 26,1910. Paper. Pp. 216, with illustrations.

A TREATISE ON ORTHOPEDIC SURGERY. By Royal Whitman, M.D., Assistant Professor of Orthopedic Surgery in the College of Physicians and Surgeons of Columbia University, New York. Fourth Edition. Cloth. Price, $5.50 net. Pp. 908, with 601 illustrations. Philadelphia: Lea & Febiger, 1910.

INNERE SEKRETION. Ihre physiologischen Grundlagen und ihre Bedeutung für die Pathologie. Von Dr. Artur Biedl, Wein. Mit einem Vorwort von Dr. R. Paltauf, Wien. Cloth. Price, $5.50. Pp. 538. Berlin: Urban and Schwarzenberg; Rebman Co., New York American Agents, 1910.

A MANUAL OF PHYSIOLOGY. With Practical Exercises. By G. N. Stewart, M.D., Professor of Experimental Medicine in Western Reserve University, Cleveland. Sixth Edition. Cloth. Price, $5 net. Pp. 1064, with 450 illustrations. New York: William Wood & Co., 1910.

HAY FEVER AND PAROXYSMAL SNEEZING (VASOMOTOR RHINITIS). By Eugene S. Yonge, M.D., Physician to the Manchester Hospital for Consumption and Diseases of the Throat. Cloth. Price, $2.40. Pp. 150, with 8 illustrations. Edinburgh: William Green & Sons, 1910.

REPORT ON THE MEASURES TAKEN AGAINST MALARIA IN THE LAHORE (MIAN MIR) CANTONMENT. By R. Nathan, C.I.R.; H. R. Thornhill, C.I.E., and L. Rogers, M.D. 1909. Paper. Pp. 55. Calcutta: Superintendent Government Printing, India, 1910.

GYNÉCOLOGIE OPÉRATOIRE. Par Henri Hartmann, Professeur de Médecine opératoire à la Faculté de Médecine. Paper. Price, 18 francs. Pp. 498, with 422 illustrations. Paris: G. Steinheil, 2, Rue Casimir-Delavigne 1911.

THE MEDICAL DIRECTORY OF NEW YORK, NEW JERSEY AND CONNECTICUT. Vol. XII. Published by the Medical Society of the State of New York (17 West Forty-Third Street, New York). Cloth. Pp. 867. 1910.

MINUTES OF THE FIFTH ANNUAL MEETING OF THE OHIO ASSOCIATION OF MEDICAL TEACHERS, Columbus, Dec. 26, 1909. Paper. Pp. 70. 1910.

New Patents

Recent patents of interest to physicians:

958848. Purifying and sterilizing water. **Albert Baudry**, Kief, Russia.
959230. Portable prescription case. **Charles F. Kurz**, Cleveland, Ohio.
958965. Apparatus for measuring or apportioning materials of a granular or other suitable form. **Thomas H. D. May**, Bath, England.
958753. Electric cautery. **William Meyer**, Chicago.
959379. Elastic bed pan. **Flora M. Otis**, Ann Arbor, Mich.
958939. Massage apparatus. **George R. Pyper**, Salt Lake City, Utah.
958893. Composition of hydrated sodium carbonate and sodium tannate. **William E. Ridenour**, Philadelphia.
959389. Surgical appliance. **Thomas E. Rodgers**, Memphis, Tenn.
960150. Spraying nozzle. **Harry D. Binks**, Chicago.
959704. Bandage. **Samuel Bottomley**, Providence, R. I.
959934. Resonance tachometer. **Robert Hartmann-Kempf**, Frankfort-on-the-Main, Germany.
959858. Sterilizer. **William T. Herndon**, Laurinburg, N. C.
959751. Poison bottle. **Sylvanus H. Kellogg**, Los Angeles.
959881. Joint for artificial legs. **David W. Price**, Owensboro, Ky.
959605. Stable composition containing hydrogen peroxid. **Max A. Queisser**, Hamburg, Germany.
959883. Apparatus for chemical cleaning. **Hermann Resch**, Lorrach, Germany.
959641. Switchboard for dental, medical or surgical purposes. **David Stern**, Cincinnati.
959970. Sanitary cleaning and indicating device for drinking vessels. **Charles W. Thornton**, Dalhart, Texas.
960481. Truss pad. **George W. Arnold**, Girard, Ohio.
960788. Manufacturing carbonic acid. **Ernst A. Behrens**, Bremen, Germany.
960842. Sanitary bottle-lip protecting device. **William B. Degan**, New York.
960843. Sanitary bottle-lip protector. **William B. Degan**, New York.
960523. Inhaler. **Henri Edde**, Paris, France.
960902. Tablet machine. **Anthony M. Hance**, Philadelphia.
960903. Multiple plunger case. **Anthony M. Hance**, Philadelphia.
960322. Hospital bed. **Elias M. Heaton**, Clarksburg, W. Va.
960914. Pills for the treatment of diabetes mellitus. **Arthur Heinemann**, London, England.
960927. Making formic acid. **Henry Howard**, Boston.
960984. Disinfecting distributer. **Joseph H. Melville**, New York.
960689. Maternity skirt. **William Padernacht**, New York.
960700. Crutch tip. **Philip W. Pratt**, Boston.
960404. Support for nozzle of fountain syringes. **Nicjolas L. Rigby**, Los Angeles.
960406. Disinfecting and deodorizing apparatus. **Edward Rooch**, Norwood, Ohio.
960721. Pessary. **Osborne H. Sheppard**, Chicago.
961033. Cup or head for massage devices. **Charles M. Siebert, Jr.**, Columbus, Ohio.
961034. Massage apparatus. **L. A. and C. M. Siebert, Jr.**, Columbus, Ohio.
961479. Massage device. **Sylvanus F. Bowser**, Fort Wayne, Ind.
961582. Artificial feet. **Joseph H. Bradley**, Hunwick; **E. Nichol**, Croxdale, and **T. L. Nichol**, Sunderland, England.
961689. Making medicated tampons. **James C. Dorr**, Dansville, N. Y.
961607. X-ray apparatus. **Amedee Granger**, New Orleans.
961350. Making nitric acid. **Friedrich Hausser**, Kaiserslautern, Germany.
961721. Apparatus for the preparation of formaldehyd. **Edouard Huwart**, Liege, Belgium.
961365. Handle for massage apparatus. **T. A. McCall** and **C. M Siebert, Jr.**, Columbus, Ohio.
961165. Artificial limb suspender and back-check. **James F Rowley**, Chicago.
961650. Disinfector. **Harry L. Schellenberg**, Detroit.
961389. Invalid chair. **Charles F. Walker**, Stockton, Cal.
961273. Invalid bed. **Lloyd W. Ward**, Buckhannon, W. Va.